

# The National Locksmith®

**CODES**  
YALE 1-1600, PART 1  
page 118

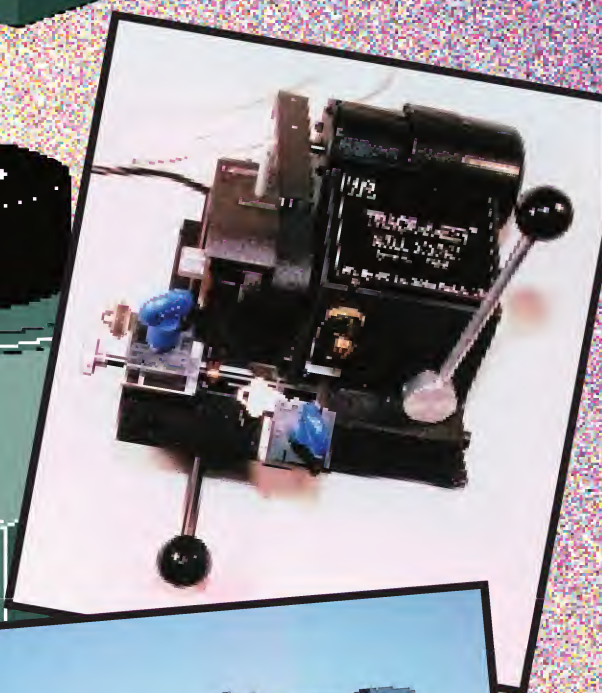
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May 1996  
Volume 67, No. 5

**A Close-Up  
Look At  
Key Machines**

page 58

The  
National  
Locksmith  
**#1** in Paid  
Circulation  
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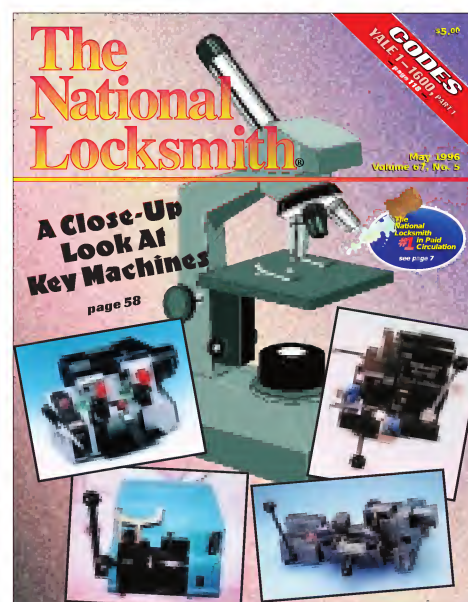
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## On The Cover

We didn't set anything ablaze this month, but we did test the performance of a few semi-automatic key machines that would turn any cutter wheel red hot. See which machine will best fit your particular need and price range.



**Editor/Publisher** Marc Goldberg

**Managing Editor** Greg Mango

**Art Director** Jim Darow

**Production Director** Edgar Shindelar

**Production Assistant** Jorge Carpio

**Technical Editor** Jake Jakubowski

**Special Correspondent** Bill Reed

**Technical Writers** Carl Cloud, Sal Dulcamaro, CML,

Steve Gebbia, CML, Eugene Gentry, Bill Heine,

Michael Hyde, Giles Kalvelage, Brian Kleiner, Ph.D.,

Dale Libby, Tom Mazzone, Dave McOmie,

Don Probasco, Sara Probasco, Robert Sieveking

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**Advertising Account Manager** Debbie Wurtz

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# Commentary

**W**e're celebrating here at *The National Locksmith*!

You'll notice that on the front cover, a graphic makes mention of our new number one status in paid circulation, and there is also an announcement on that topic on page 7.

We here at the magazine as well as our advertisers would like to thank you, the locksmith, for making us the number one circulated magazine in the locksmith industry. As you will read on page 7, our figures surpassed those of the competition, making us not only the best book in the industry, but also the most read. Again, thank you for the support you have given *The National Locksmith* magazine.

Also, thank you for the many letters and E-mails I have received telling us how much you enjoy the magazine. It's always nice to hear that we are pleasing you, our readers.



**Marc Goldberg**  
Editor/Publisher

**W**e have introduced a new book called the Automotive EDGE which you can read about on page 82. The book sells for \$149.95 and contains over 400 pages of hard hitting locksmith service procedures for many cars. It covers such things as high security cars, domestic vehicles, columns and air bags as well as lock removal, disassembly and code locations.

If you are an NLAA member you will already be in possession of this material. But if you are not an NLAA member, or if you only joined it recently, then this book is for you and will make your automotive locksmith work quicker, easier and more profitable.

**A**s submitted to the Reader's Digest by Billy D. Jackson:

"On my daughter's wedding day, the phone rang as my wife and I were about to leave for the church. The caller, an agent for a national auto club, was requesting my services as a locksmith because a member had locked himself out of his car.

"The job was only a few blocks away from the church, so I grabbed my tools and headed for the limousine. We reached the stranded driver, and I emerged from the limo wearing my tuxedo. I opened his car door in seconds, then handed him an invoice to sign.

"See," the motorist said to his wife, "I told you our auto club only uses high-class service people."

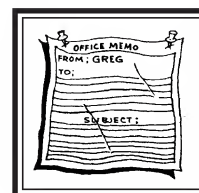
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*Marc Goldberg*

**The  
National  
Locksmith  
is now  
number one  
in circulation!**





# Mango's Message



*Greg Mango*  
*Managing Editor*

## HELP, I NEED A LOCKSMITH!

It was a bitterly cold winter, with record snow fall in the east and temperatures dipping to 19 degrees - below zero that is - in Chicago. It was the kind of cold that turns motor oil into sludge, forms ice crystals in your veins and causes this critters brittle bones to creak. I hate it. After living in Texas for 15 years where the temperature seldom dips below 40 degrees - above zero that is - this 19 below zero stuff isn't fit for the abominable snowman, which is just what I was beginning to feel like, and worse yet, look like.

Suddenly, the clouds in the sky parted, the sun's rays cradled the earth in a caressing blanket of warmth and the mercury in the thermometer began going up - all the way to 55 - instead of down, for the first time in what seemed like forever. It wasn't a day too soon either, I was becoming clinically depressed. OK, maybe not clinically depressed. I only felt like committing suicide once, on that 19 degree below zero day. To be clinically depressed, I believe you need to have actually attempted suicide. One more 19 below zero day, and I would have qualified.

Lucky for me, I was granted a reprieve and the earth, along with myself, thawed. It was a brief thaw, but a badly needed one. It was a Saturday morning in the middle of February and hoards of people were in the streets gazing at the fire-ball in the sky as if it were an unknown oddity. All I knew is, it felt cuddlier than my flannel lined bunny toed slippers.

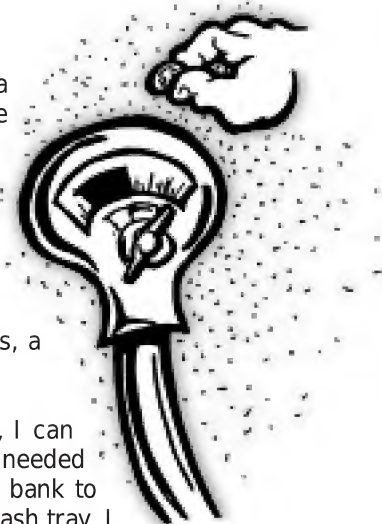
After being house bound for the last six weeks, I was getting a bit stir crazy and decided to take a drive downtown to cruise the Miracle Mile (Michigan Avenue) and stop in a store or two. Trying to find a parking place on the streets of downtown Chicago is like hunting for open space in a bee-hive. You need eyes like a hawk, the speed and reflexes of a cheetah, as well as be half insane looking for a spot on the street in the first place.



After circling the store for about 30 minutes, a parking spot finally opened. I swung my car into the space, threw the shifter into park and gasped a sigh of relief. Finally, I can stretch my legs a little. Before doing so, I needed to make a small withdraw from the local bank to pay the parking meter. Sliding open the ash tray, I dug for every quarter I had, and I do mean every quarter. Twenty-five cents only buys 15 minutes of parking time here. I was able to scavenge up \$1.25 in quarters, I hadn't made a deposit lately, and I was ready to go.

After the meter gobbled everything I could feed it, I lightly patted my back pocket for my wallet, check, then my front pocket for my keys - Uh Oh! - something's missing here. Another pat to both front pockets this time and my heart momentarily stopped. With the meter happily counting down, I peered through the window of my car and sure enough, my keys were hanging from the ignition. Great, this is just great.

Under the circumstances, I'm proud to say I remained quite calm and collected. Now, you'd think my reserved calmness was due to the fact that I'm a locksmith who would laugh at the perceived daunting of a locked



*Continued on page 8*



**Continued from page 6**

vehicle, right? Wrong! I remained calm because I hadn't noticed the exhaust billowing from the back of my car yet. Yes, I not only locked my keys in the car, this knuckle-head also failed to at least, turn the ignition off before doing so. Right about now seemed like a good time to get hysterical. I have never done that in my life! Ever! I swear.



As gloomy as things may have seemed, I did have an Ace, or rather a card, up my sleeve. As a professionally, well prepared, ever-ready locksmith, I did have a credit card key in my wallet. See, I'm not a total idiot. Smug and confident, as if I had everything well under control, I sassily reached into my back pocket and whipped out my wallet like a detective cracking open his badge. Lets see here, a credit card, bank card, social security card, phone card, Sam's card, drivers license, a picture of my wife, oh wait a minute, that's not my wife, that's the picture that came with the wallet. I remember now why I bought this wallet, I can't tell you how many guys think my wife is the spitting image of Sophia Loren. Just kidding, actually my wife is much prettier.

As you'll notice, I had every card known to man except a credit card key. You don't think that's because it was in my Daytimer daily planner on my dresser at home do you? What a bonehead! OK, maybe I am a total idiot.

As the temperature gauge in my car began to rise - along with my blood pressure - it was time to implement plan two. Look for a pay phone to call for help. There's nothing more frustrating than being a locksmith locked out of your car, with it running no less, and not having the tools to open it. Grrrr. Finding a Chinese restaurant nearby, I headed straight for the phone to call the police. Oh man, I feel the heat from that one. It was a joke, relax. I can see it now, my mail box is going to be full of death threats and ticking packages. You didn't think I would call a locksmith and be totally humiliated did you? Not a chance. Like ET, I phoned home for my dad to get the credit card key in my Daytimer.



Driving like a seasoned technician, my dad was downtown in no time. Finally, the elusive card key. I was about to wave my dad on when I thought I had better make sure it worked first. I knew it would, until I inserted it into the door lock and it didn't turn. OK, no problem I told myself, maybe one side just wasn't cut quite right. That didn't make me feel a whole lot better because I'm the one who cut this card key. Turning the key over, I proceeded to try the other side. It still didn't turn. I tried again and again until I almost broke the plastic key off in the lock. (That would have been another story in itself.) Nothing, Zip, Zero, Zilch. I couldn't believe it. What else can go wrong? Don't ask.



All right, I've had just about all the fun I can stand on this beautiful, bright, soon to be wasted, sunny day. It was time to implement the universal car opener.

Sensing things weren't going as planned as I scavenged the street for a warm, my dad parked his car to offer his professional help and advice.

"Let me try my key" he offered.

There's no way its going to work, I'm thinking to myself, his car is an older Ford with pin tumbler locks and mine is a newer Ford with 10-cut locks. Two totally different locks and two totally different keys, there's just no way, but as a good son, I humored him by agreeing. My teeth nearly dropped out of my head when the ignition key to my dad's car turned my door lock as if it were made for it. Unbelievable. Like I said, I had no doubt it would work. I hate it when I'm wrong. OK, maybe this "one" time, dad knew best.

You know, as I recall this most embarrassing, humiliating and painfully memorable experience, maybe that 19 below zero stuff wasn't so bad after all. It's hard to be a buffoon and lock yourself out of your car when you're house bound!

**P.S.** What's that you ask? Why didn't the credit card key operate my car? Oh, I know what you're thinking, you think I couldn't even properly cut a key don't you? Well, I'm sorry to disappoint you, but I am a little smarter than that. The card key wasn't for my current vehicle, it operated a car I owned **previously**. So there.





M A Y 1 9 9 6

# Letters

*The National Locksmith* is interested in your view. We do reserve the right to edit for clarity and length.

## A Sense Of Admiration

I have to confess to some admiration for the unnamed tow truck owner in Springfield, Missouri. I'm referring to the guy whom Richard Solomon keeps belittling in your letters column. Evidently, the man is scrambling for business and taking courses to improve the service he offers to customers. It is tough enough to compete in the market place, without Solomon playing cruel tricks on him, and calling him ugly names.

Hard work and self-improvement are very much in the American spirit. Mr. Solomon seems to have a problem with that.

That tow truck owner must be a man of remarkable patience. After being challenged to open an intentionally broken truck door, many men would have intentionally broken Solomon's nose. It is no wonder he chose to attempt that humiliating stunt in the presence of four police officers.

Fortunately, the entrepreneurial spirit is the American way. Unfortunately, we will all encounter jerks like Solomon from time to time.

Donald S. Mohan  
New York

## Try Helping, Not Hurting

I read the article "Certified Locksmith" written by Richard Solomon in the February 1996 issue. I really did not think it was as humorous as he did; it appeared to me as a belittling article from a man with a big ego. I was really surprised that you published it. I am a firm believer in praising one for his or her efforts; not belittling one as he did. We all start somewhere (some of us from the bottom of the ladder of success while others are more lucky and with friendly help start a little further up this ladder called success.) He should be thankful that this did not happen to him; or has he forgot he was there once himself. My advice to him is please do not do this with others. Especially your own children if you have them. Try to reach down and help someone else up; don't kick them in the face on their way up. If you find it too hard to help someone else; at least do not belittle them.

LeRoy W. Riffenburg  
Michigan

## Cross Country Motor Club Response

I would like to respond to a letter you published in your March '96 edition of *The National Locksmith* (Vol. 67, No. 3) from a Brian E. Adkins of California (page 10.)

First, we are not familiar with Mr. Adkins and, since he did not identify



his company, we are unable to help resolve any issues he may have. His letter is especially puzzling since we are currently processing completed claims within ten (10) business days. Delays only occur if information is inaccurate, incomplete or contrary to agreed rates

Second, Cross Country requires a completed invoice to pay for vendor services, just like any business. I would be interested in hearing from anyone who pays bills without knowing what it is they are paying for.

Third, this article was brought to our attention by several of the 10,000 locksmiths who are part of our vendor network and expressed anger at the implication in your heading and Mr. Adkins' letter. As most of your readers know, Cross Country Motor Club provides millions of dollars in business to our industry, has been doing so for almost twenty-five (25) years, and continues to enjoy a reputation for EXCELLENCE.

Cross Country Motor Club VALUES our service providers and

**The National Locksmith**  
**1533 Burgundy Parkway**  
**Streamwood, IL 60107**  
**Attn: Editor**



## Continued from page 10

will continue to expand our mutually rewarding vendor relationships with providers demonstrating the same level of excellence.

*Dea Harrington*  
Vice President - Operations  
Cross Country Motor Club

**Editors Note: I have received a lot of E-mail on this subject. While a number of locksmiths were unhappy and reported delays in payment, many were also satisfied with Cross Country's payment record.**

**Marc Goldberg**

## More Alarms

I am an avid reader of your magazine, especially as I am new to the trade (my one-man mobile shop that turned one year old on Jan. 30.) I was inspired to write when I read a letter in this month's issue written by Chris Peacock, CPL, New York. He mentioned your recent alarm articles by ITI and he's right. I too, can't be a dealer because they (ITI) said "had too many dealers in that area." I had just assumed that ITI wouldn't sell me their product because of my lack of alarm experience. I admit that I've never installed or serviced any alarms. This is why I've been reading these articles that you've been printing. ITI makes their informational articles sound like they have the best alarms, "particularly for new installers" (p.33 The National Locksmith 11/95).

I stopped reading the ITI articles in December 1995, when I finally was denied dealership. I almost stopped reading Chris Peacock's letter when I saw the letters ITI. But I am glad that I finished reading his article - thanks Chris. I, too, would like to see more articles on alarms, using a wider scope. Maybe you could write an article that would inform locksmiths of the different types of alarms, as well as the different companies who will distribute them to locksmiths.

*Chris J. Bayer*  
Massachusetts

## Up For Associations

In reference to postings against joining local associations; I too was against joining an association for the first five years of my business. I talked with a friend of mine in an association in my neighboring state and he seemed so pleased with his

experiences that I joined in my state. The locksmith I contacted to sign me up was nowhere to be found on the first meeting I attended (He was busy I'm sure) and I almost left never to return as most of the other locksmiths were busy chatting with each other, and I felt mighty strange standing there alone. Just as I started for the door I heard a voice from behind say "You must be new, let me show you around. I turned and met what turned out to be one of the finest locksmiths you will ever find. This man has helped me through many projects and has never asked for anything in return. The amount of money that I will make with information he so willingly shared is in itself enough to make me glad I joined, but the friendship with him and others like him in our association mean even more to me.

Yes, there are small groups of self centered people in each association and each person has their own agenda as with any group of people. I agree that there are problems and that a lot of associations are operated with the same group in power year after year, but you could join and vote them out and help to change what may be wrong.

Don't let one or two sour pussies keep you from becoming active in an association, I assure you there are some super locksmiths at these meetings and some super locksmiths waiting in the wings to turn every meeting into an event everyone will be proud to attend.

Who knows, maybe you'll meet someone like Phil Ashley (owner of A.L.S. locksmith of in Landrum, S.C.) and be as proud as I am to call him a friend, teacher and fellow member of the S.C.L.A.

By the way, I don't have any letters after my name either but I RESPECT the efforts of those that do.

*G. Henderson*  
E-Mail

## The Slim Jim's Final Verdict

I am writing this letter to let other locksmith's know what serious problems there are in using this tool on newer automobiles. I have been in the locksmith field for only five years and haven't used one yet. I guess I have been taught by one of the best CML's, Jesse O. Brown, from Alabama to never use a Slim Jim. He has taught me to pick a lot of car's,

except GM's. My main complaint is Police and Sheriff's departments doing our job as locksmiths. I don't know if anyone is aware of it, but there is a Federal law that prohibits Police departments and law enforcement agencies, from having such tools and I am looking into this matter very deeply. Let me give you locksmith's an example of what could happen in the near future. Let's say that someone has called the Police Department for help because they have locked their keys in their automobile. The Police take it upon themselves to open the automobile with a Slim Jim and find out they can't open it. A locksmith is finally called and he comes out to open it, and within five minutes it is open. Now let's assume that within one week this same automobile is in a serious accident and it catches on fire and the driver grabs the door handle from inside and it doesn't open and the driver dies due to the fact that the linkage has been tampered with. Now comes the biggest question, who is responsible - the Police or the locksmith who opened it last? Was it the locksmith's fault, the answer is NO, it is the Police because a Slim Jim had been used to jimmy the linkage loose by an inexperienced person who thinks they are trying to help. The moral of the story is, let the locksmiths do their work, and let the Police enforce the law.

*Jerome H. Cohen*  
Alabama

**Editors Note: In this letter, Mr. Cohen states that "There is a Federal law that prohibits Police departments and law enforcement agencies, from having such tools" referring to lockout tools. This statement is not exactly correct. I assume he is referring to Public Law 100-690, Section 3002(a) - Non Mailability Of Locksmithing Devices, which was passed under the "Anti-Drug Abuse Act of 1998" in which Police departments and law enforcement agencies are not exempt from the law.**

According to this law, a manufacturer, distributor, or individual is prohibited by law to knowingly sell or deposit through the mail or delivery, lockout or bypass tools to anyone except; a lock manufacturer or distributor; a bona fide locksmith; a bona fide reposessor; or a motor vehicle manufacturer or dealer.

This law, however, only applies to lockout or bypass tools that are sold through the

*Continued on page 14*



mail or transported by any interstate mailing or delivery service. In most states, it is not against the law for anyone to possess such tools if purchased over the counter. This is why they are sold in many auto parts stores.  
Greg Mango

### Excellent Work

Please include us on your daily E-mail list. As a subscriber and supporter, I find your offerings and information "on the cutting edge." Bill Reed and Steve Young, at their recent seminar here in Florida a couple months ago, did much to reinforce what you are presenting every month. A professional approach and attitude to the true profession which is no longer a "tinker's trade" is appreciated. Please keep up the excellent work.

M.W. Eheart CPL  
Florida

### It Does Do Ford's

Mr. Mazzone's "Automotive Tool Showcase" article in the February issue was well written and informative. One correction has to be made regarding the LTI 620 Lock Pick Set. The Ford ten cut ignition

can be picked using the G.M. picks. The Ford sidebar lock is basically the same as the G.M. sidebar lock. Use the G.M. picks with the cuts up on the Ford and down for G.M. Wear gloves when using these picks because they have a tendency to dig into your skin, being that the handle is in the middle.

Richard Reichert  
New York

### Roadside Price Slashing

I have just heard from two of our members that Pontiac Roadside has announced price cuts for locksmiths. Besides reducing what they will pay for cutting a key and delivering it, they have reduced other services. To interrogate a VATS, the maximum payment is now \$77.00. Since the dealers in my area are charging \$225 to \$250 plus towing, I get the feeling that Pontiac is trying to get us to work for minimum wages or less.

They also want this service 24 hours a day, 365 days a year. I guess this means that this year we have just missed our one day of vacation - Feb. 29. As much as many locksmiths seem to hate associations, this is the one place that an association (either local or national) can try to help. Numbers DO mean clout. Of course this is hard to do as long as we have the amateurs going out for \$5.00 service calls. Let's get professional - the same as the plumbers and electricians - and demand fair wages - not minimum.

Bill Madlebaum, CPL  
E-Mail

### Roadside Reaction

Just my two cents on the subject of Roadside price slashing. I do not, and will not, let other companies tell me how much I am going to charge to do a job. If all locksmiths thought this same way, these companies would not be able to control you! These companies will only use the companies that allow them to control them. If no locksmiths allowed these companies to control them, then they would have no choice but to pay what your price is! I believe that I would be willing to give substantial discounts to a road service that gave me a lot of business, BUT, I would tell them what their price would be. They would NOT tell me. This is America, where you have the right to set your own price, its not a

Communist State. Your price is normally determined by your cost of doing business. Of course, there will ALWAYS be the guy who will cut everyones price in half, but that's another story.

So tell me, how can any of these road services determine what your cost of doing business is? And even if they could, why would you allow them to? It is your business, not theirs! Would you go into somebody else's business and tell the owner how much he/she is going to sell his/her product to you for? NO! (If you did, he/she would most likely show you the door)

Car manufacturers are making cars more and more difficult to open, which means these road services are being required more and more to use the services of locksmiths, mainly because they are tired of paying too much in repairs. Don't let them tell you how to run your business, just because they need you!

Richard Dorame  
E-Mail

### Custom Crisis

I just wanted to pass along the hassle I had with Custom Security Products and their Tri Axes pick. I ordered it in July and they promptly debited my credit card. I called several times and got the run around. Once they even called me on my cellular phone and tried to sell me another pick! They finally sent it in November, but it doesn't work. I took it to our local locksmith meeting and no one could even pick open a simple pin tumbler. The pick was advertised to open side bars. I have sent the thing back and my credit card has refunded my money. I hope that will be the end of it.

Diane Meyer, CRL  
E-mail

### I'm Impressed

Just received my complimentary issue of The National Locksmith. I was definitely impressed. If this magazine is going to continue in the direction demonstrated in the February 96 edition, I will no longer maintain my subscription to the other magazine. I would like you to enroll me now for a 1 year subscription.

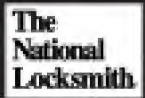
Rick Wiesbrock  
E-mail



*It's not safe  
unless it's  
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# Coring A Bank Vault Wall



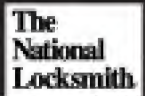
by  
Carl Cloud

Coring an eighteen inch thick bank vault wall, requires only four ingredients:  
Blood, sweat, time and a sixteen inch hole saw.



There are occasions when drilling through the front of a bank vault door to overcome a lockout simply isn't practical. Such was the case of the Mosler door in photograph 1. This door was labeled by Underwriters as a class three burglar rate, which means it will resist penetration with electric or mechanical tools for a minimum of two hours.





Continued from page 16



**1. A Mosler two hour burglar rated vault door. Two LaGard Restrict-a-Vision dials drive the Mosler MRK 403 locks.**



**2. The concrete coring rig in action. The cutting pressure is being hand applied. Hydraulic fluid rotates the sixteen inch hole saw.**

**B**oth combination locks were operational, both would unlock. The wheel handle to retract the locking bolts was the problem. It spun freely. The operator of the vault said that when he attempted to turn the wheel, there was the sound of something falling to the bottom of the door. There obviously was a disconnection between the handle shaft and the carriage bar of the locking bolts.

**The thickness and makeup of the vault wall was eighteen inches of solid concrete intertwined with reinforcing bars.**

Oddly, this same situation occurred to this door two years previously. A concrete coring company was called and they cut a hole through the wall to the right side of the door. A safe technician crawled through the hole and unlocked the door from the inside. When the same problem reoccurred, the coring company was called again.

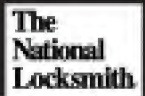
This is where I came into the picture. The coring company called me and said they had scheduled a time for

coring the wall and would I be available to open the door from the inside. We discussed the cost of my services and an estimate for the repairs. A second telephone call confirmed that the customer had accepted the cost figures. All systems were a go!

The thickness and makeup of the vault wall was eighteen inches of solid concrete intertwined with reinforcing bars. *Photograph 2*, shows the technician operating the concrete coring machine. The rig is anchor bolted to the vault wall. Outside the building, a portable pump supplies hydraulic fluid through hoses to rotate the massive sixteen inch hole saw. The curved pipe resting over the technicians knee is from a vacuum machine. A heavy spray of water fed from inside the hole saw is directed at the diamond tip cutting edges to flush away material. As the water trickles down the wall, the vacuum picks up the excess and dumps it into a receiving container.

*Photograph 3*, shows the completed hole. The first coring of the vault was to the right side of the door. That area inside the vault now has equipment setting against the wall, which eliminated that portion of the wall to core. It was decided to cut the hole to the left of the vault door. Not knowing the configuration of the vault, the cored hole hit the edge of the left wall. In *photograph 3*, you can see pieces of reinforcement bar protruding from the left vault





Continued from page 18



3. The finished hole. Reinforcement bars juts out from the side wall of the vault.



4. The cause of the problem. The nut holding this connecting bar to the handle shaft had loosened and allowed the bar to fall off. A nut and cotter pin can be seen securing the shaft to the vault door.

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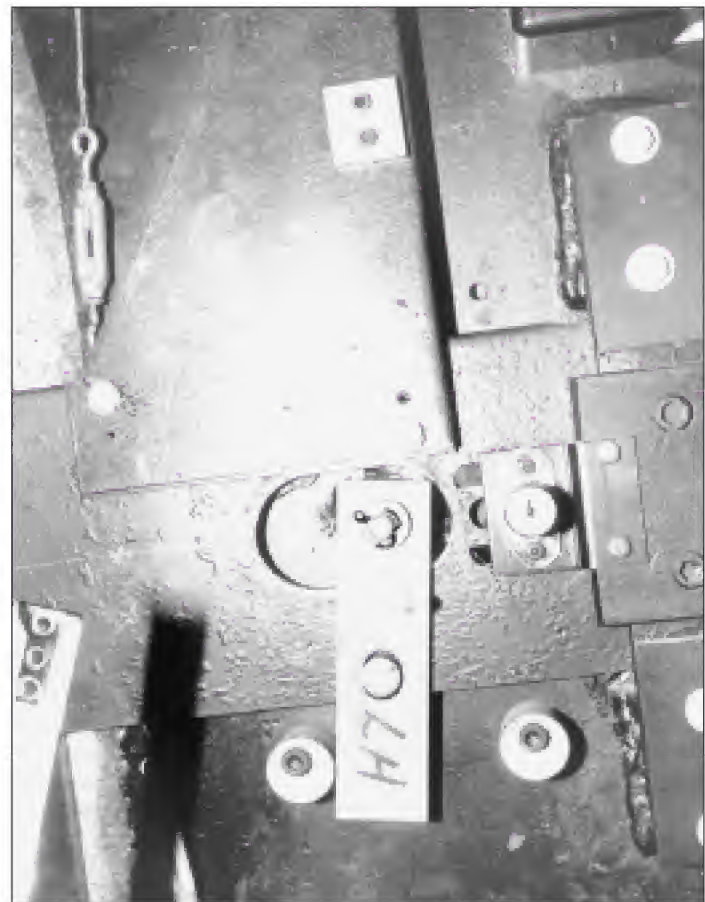
wall. This decreased the size of the hole from sixteen to about twelve inches. The corner of a small metal cabinet can be seen in the lower right portion of the hole.

**T**he amount of time to set up, cut the hole and pack away the equipment, was about twelve hours. The actual cutting time was seven and one half hours. The excessive reinforcing bar doubled the normal cutting time to create the sixteen-inch diameter hole. This vault wall was unusually tough!

My aged and 'fully contoured' body wasn't going to fit through the reduced hole size. A call to safe technician extraordinaire Lee Swearingen, brought his trim lean body dashing to the scene. Before I could take a picture of him slithering through the hole, he was inside asking for an offset screwdriver. Within two minuets, he called out to turn the wheel handle and the vault was open.

**This nut wasn't going to loosen and fall off again!**

*Photograph 4, confirms what I had suspected. The connecting bar from the handle shaft to the carriage bar had loosened and had fallen off. The shouldered handle shaft was secured to the door with a nut and cotter pin. The square hole in the connecting bar slides onto the square end of the handle shaft. A single nut secured the bar to the shaft.*



**5. The connecting bar reinstalled and secured with Loc-tite and a cotter pin for added assurance.**

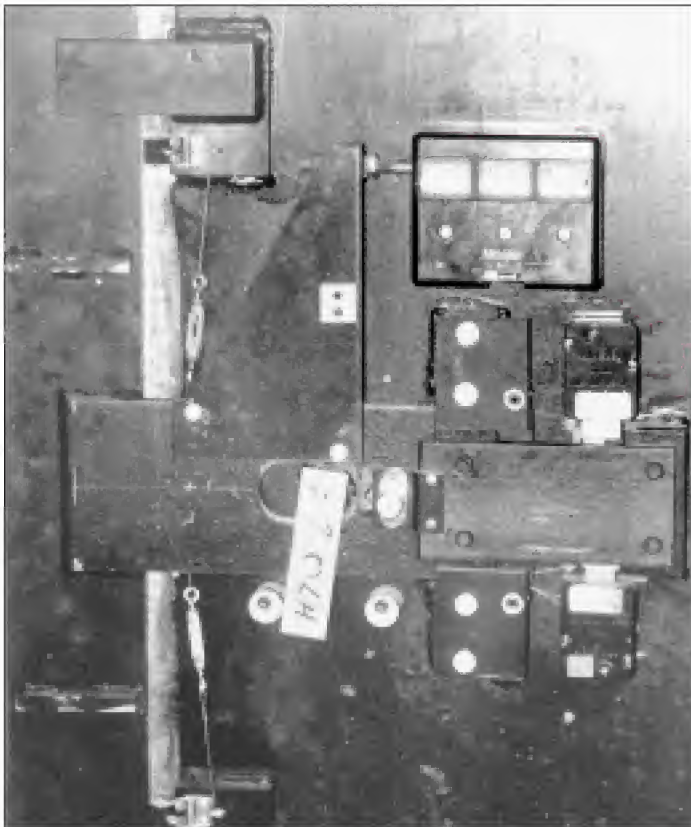


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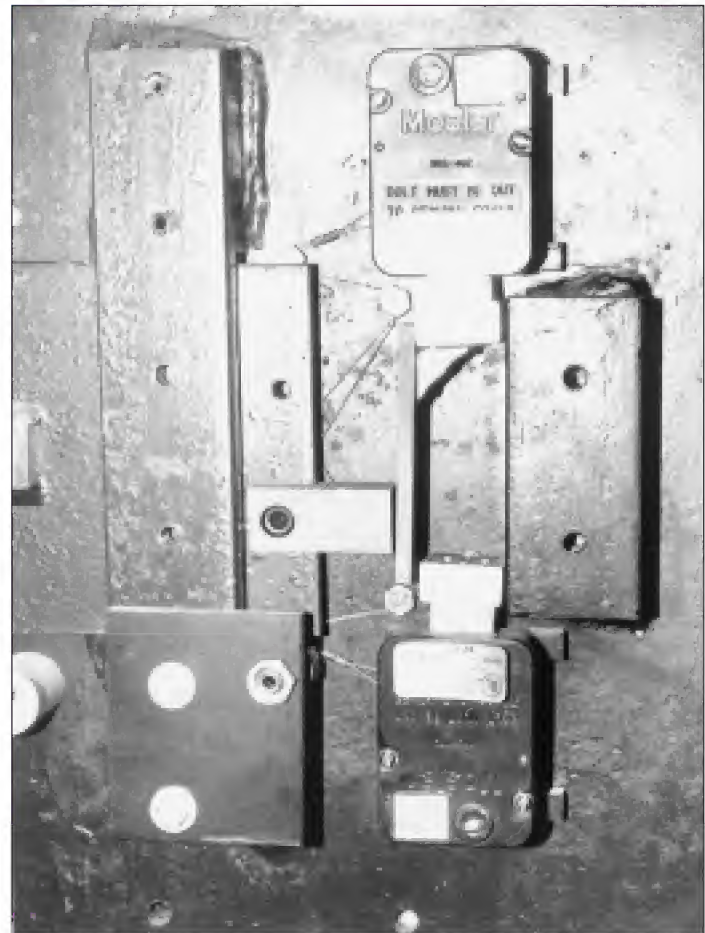
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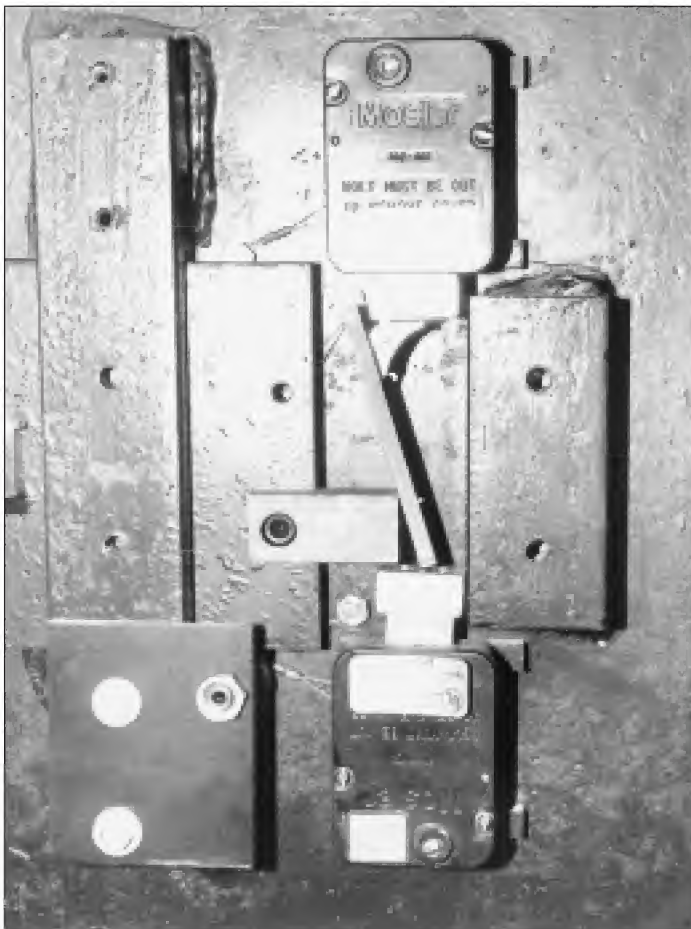




**6. The door is controlled by a three movement time clock and two Mosler MRK402 locks.**



**7. The pivot bar in the locked position.**



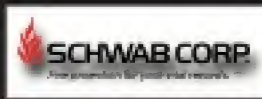
**8. The bolt of the top lock has retracted, raising the bar to a pivot position. The snubber bar can now move to the right and retract the doors locking bar.**

To prevent this part from loosening again, a spacer was put onto the shaft. The threads of the shaft were coated with Loc-tite and the nut tightened. A hole was drilled through the shaft to allow an additional cotter pin to be installed. This nut wasn't going to loosen and fall off again! Photograph 5, shows the connecting bar installed. Note: There are two round posts just below the carriage bar. One on each side of the connection bar. These act as throw stops for the handle. The turning of the wheel handle only moves about ten degrees from open to lock.

The layout of the door is shown in photograph 6. The door is controlled by a three-movement time clock and two Mosler MRK402 locks. The top lock is mounted vertical down and the lower lock is vertical up. It was strange to see the LaGard 1730 Restrict-a-Vision dials driving the Mosler locks. (See photograph 1) Also notice the two small turn buckles adjusting the wire cables to the relockers. There is one above and one below the carriage bar. The wide vertical bar in the left side of the photograph is the locking bar for the door. This door does not have individual locking bolts. The locking bar runs the height of the door.

In photograph 7, the flat plate that covers the area between the two locks has been removed, showing the unusual locking mechanism. Each of the Mosler locks has a block extension attached to the locking bolt. The top lock has a pivoting vertical flat bar attached to its extension block. In the locked position, this vertical bar lays flat against the side of the lower extension block. The snubber bar - the short horizontal bar - cannot slide pass the vertical pivoting bar.





**9. The open door. Nine inches of solid steel from the door face to the lock cases.**

If you compare this photograph with *photograph 8*, you'll see how the pivot bar operates. The top combination lock is unlocked. The locking bolt has retracted and lifted the pivot bar up to clear the locking bolt of the lower lock. The snubber bar is attached to the carriage bar. When the wheel handle is turned, it moves the snubber bar against the free pivoting vertical bar. This side movement is sufficient to allow the doors locking bolt (bar) to be retracted. When the snubber bar is moved away, the pivoting bar returns to its original position, allowing the top locking bolt to extend. Either combination lock will open the vault. If the lower lock is used, the extended block simply moves below the end of the pivoting bar, freeing it to be moved by the snubber bar.

Also notice in *photograph 8*, the relocker wires running under both lock cases. These wires attach to the turn buckles shown in *photograph 6*. The relockers are spring loaded blocks. When fired, they prevent the doors locking bar from retracting.

*Photograph 9*, shows the door standing open. It's nine inches of solid steel from the door face to the lock cases. The small knob on the door frame is a ventilation switch to circulate air within the vault. Coring a vault wall is always an option, especially when the malfunction is within the door mechanism or the exact layout of the inner door is not known. **INL**



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## SECURITY CAFÉ

### New Micro Technology in Personal Alarms!

After five years of research and development, Lion Security Products of Minneapolis has developed the next generation in personal alarms. Introducing for 1996 the BODY GUARD #7000 micro-personal alarm with quick release key chain and mini-light.

This super small and super lightweight personal safety device fits in the palm of a woman's hand, packs 120 decibels of pulsating electronic alarm sound, comes with a nickel plated quick release key chain, has a built in mini-light for night safety, and weighs less than 3 ozs. This product is about 1/2 the size of other alarms on the market! "Our breakthrough design only became possible because of a revolutionary new 12 Volt electronic system that gives the unit its' super small design and yet gives it the power it needs for the alarm to be heard up to a full city block, if sounded off outside.



The mini light and quick release key chain also make it convenient for any person to carry them at all times!", explains Elizabeth Di Leo, Nation Sales Director for Lion Security Products. "At a suggested retail price of \$17.95, the BODY GUARD #7000 is also very affordable," Di Leo adds.

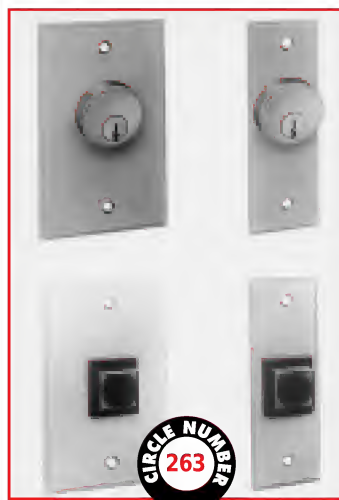
### Detex Introduces Complete Line of Security and Surveillance Mirrors



The Detex Corporation now offers a complete line of convex security mirrors for indoor and outdoor use. The mirrors have safety, security, surveillance and traffic applications and can be used to improve security, eliminate accidents, avoid personal injury, prevent theft and reduce losses. The mirrors are available in full hemisphere (360 degree) ceiling dome models, half-hemis-

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### Phoenix Industries Announces The Double Defender Quick Release Alarm



The DD-QRA combines the most desirable functions of several pieces of door hardware. Operating as a true opposing-throw dual deadbolt, the DD-QRA strengthens the door as it extends a bolt into the hinge and strike jamb. Even if door hinge pins are removed, the DD-QRA holds the door firmly closed within the frame. Although forcible entry is frustrated, egress is easy. Less than 15 lbs. of pressure on the paddle retracts the bolts and sounds the 107 dB alarm. A key operated disable switch allows silent operation when desired. Reliability of this UL listed product is insured by an industrial grade steel gear and rack transmission.

### American Lock Introduces Industries First Laser Engraved Padlocks



American Lock Company, a leading manufacturer of high quality padlocks and accessories, now offers laser engraved padlocks. Laser

# Security Café

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phere (180 degree) wall-mount models, and quarter hemisphere (90 degree) corner-mount models. They are made of impact resistance acrylic, provide an extra-wide field of vision, are easy to install, are virtually maintenance-free and work 24 hours a day.

Detex Corporation is a manufacturer and worldwide marketer of industrial security hardware, access control, safety equipment, and watchtower systems, with support facilities in Europe, and general offices and manufacturing facilities in New Braunfels, Texas.

Designated the PB700 and 720 series, these switches include SPDT controls and are available with narrow faceplates and/or indicator lights as optional features.

Also available, the new SS920 series key switches. These key switches have both momentary and maintained SPDT controls, and a narrow version is also available.

JLM Wholesale is a national distributor of door hardware products used in the locksmith, architectural hardware, aluminum storefront and security industries.

# S E C U R I T Y C A F É

engraving, direct from the factory, is a new way to permanently customize padlocks for safety lock-out applications.

In 1991, American Lock pioneered the method of permanently marking padlocks using dot matrix. Since then, Customizing padlocks has become a popular option in the safety lock-out market. The new laser engraving method takes the concept of marking locks to a new sophistication.

"Laser engraving is the best way to put easy-to-read, non-removable markings on padlocks," says Phil Settecase, Vice President of Sales and Marketing for American Lock. "Laser engraved padlocks are easily identified because the marking is clear and clean."

American Lock is the only manufacturer capable of laser engraving padlock bodies, on all four sides, with a company's name or logo, worker's name, identification number, or special coding for instant identification. Because American Lock offers a selection of various type styles and font sizes, just about anything can be engraved on the padlock.

American Lock offers the laser engraving option on its solid body aluminum padlocks — available in eight colors and three shackle lengths — as well as on its brass padlocks. American Lock's color-coded aluminum padlocks help companies comply with OSHA's lock-out-tag procedure for general industry (Title 29 CFR1910.147), which is third on OSHA's, list of the Top 10 Most Violated Codes.

## **Securitron's New High Security Balanced Magnetic Switch**

Security Magnalock Corporation introduces the new MSS series of high security balanced magnetic switches.

CIRCLE NUMBER  
266



Used primarily to monitor door position, the MSS series incorporates enhanced technology (patent pending) to provide superior defeat resistance from narrow read angle and limited match pairing of switch and actuator. Standard versions include SPDT output, protected mounting for tamper resistance and concealed pry tamper alarm circuit.

The MSS series is housed in a compact design that is less obtrusive on the door. The completely sealed and weatherproof unit allows unchanged operation whether mounted on steel, aluminum or wood; indoors or outdoors. The MSS series includes 10 feet of cable for concealed installations with an optional armored cable for surface mounting. Also, for specific requirements, a remote test version is available.

The MSS-1 has been awarded UL listings in the high security and outdoor switch categories. It is backed by Securitron's two year warranty and toll free technical support from the U.S and Canada.

## **DLA Master Keying Upgrade**

CIRCLE NUMBER  
267

DLA Security Systems Inc. is pleased to announce the addition of ASSA and Medeco Biaxial modules to MULTI-MASTER 6.5 and MULTI-CORE 4.5 Master Keying Software.

MULTI-MASTER 6.5, for standard cylinders, has a database of 20 of the most popular manufacturers.

MULTI-CORE 4.5, for interchangeable cores, has a database of all major IC manufacturers, including



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Best A2, A3, A4, Medeco, Corbin, Russwin, System 70, Sargent and Emhart High Security.

Both programs feature user-selectable progression sequence, tracking of master cuts used in previous systems, numbering of change keys in either standard alphanumeric format or sequential format, system expansion, location files and a location listing for clients. In addition, MULTI-MASTER 6.5 features rotating constants.

MULTI-MASTER and MULTI-CORE will run on any IBM or compatible PC.

### DoorKing Large Screen Telephone Entry



CIRCLE NUMBER  
268

DoorKing has added a new telephone entry system to its line of access control and communication products. The new model 1817 features an eight line, super twist, 1/2 " character LCD display, includes a 2400 baud modem to allow programming from a PC, and can store up to 5000 transactions in its history buffer.

One unique feature of the 1817 is that the screen is split, displaying four names on the top screen and four names on the bottom screen. With the split screen concept, the eyes tend to scan one screen and then the other. Since each screen only displays four names, it becomes easier to locate a specific name. It also allows the system to display a user message on the top screen, and operating instructions on the bottom screen when the system is not in use.

The 1817 has a built in 2400 baud rate modem which allows for rapid transfer of information from the PC to the system. DoorKing has developed a software program for the 1817 that allows even the novice computer user to program the system. The PC will maintain an accurate record of all the information stored in the 1817 system, and when data in the system needs to be changed, it can be done right at the computer, and then transferred to the entry system via modem.

### Jado Introduces Vogue Collection

Creating a lasting first impression in contemporary design, the vogue collection, with its attention to detail, makes it a winner. Vogue is available in three finishes - Polished chrome, diamond finish and the beautiful split finish of both diamond and chrome finish.



CIRCLE NUMBER  
269

Jado's Exclusive diamond finish gives brass a natural look, along with the benefits of a lifetime finish warranty. As with all of Jado products, this collection comes with a lifetime mechanical warranty. The Vogue collection is expanded to include the diamond finish on the entire entry set.

### Weslock National, Inc., has introduced the 300 Series Savannah

CIRCLE NUMBER  
270

A two-piece brass entry handleset with a popular, sophisticated design and a

## SECURITY CAFÉ

standard 10 year mechanical warranty.

The 300 Series Savannah styled entry handleset can be ordered as a single or double cylinder deadbolt, with a wide choice of interior options: a 300 Series Tulip or Barrington styled knob; a 600 Series Ball, Impresa or Savannah knob style; or a 600 Series Bordeaux, Calais or Lexington lever style. The Savannah entry handle is also available in a dummy handle and cylinder function.

WeslockNational 300 Series Savannah entry handlesets feature the security of a 1" throw deadbolt with two hardened steel rollers to prevent sawing.

In addition to Polished Brass and Antique Brass finishes, the 300 Series Savannah is also available in Polished Chrome and Satin Chrome.

### Dashlite Flashlight

If you have ever reached for the flashlight in your auto's glove box, and it was either dead or missing, you know why the Dashlite flashlight is quickly gaining popularity.



The Dashlite is a compact flashlight made to be stored in your vehicle's cigarette lighter socket where it recharges automatically while you drive. This flashlight is so useful because it never needs batteries and is always within arm's reach in your car, truck, or RV. Powered by built-in rechargeable batteries, the Dashlite has solid state circuitry to prevent it from overcharging or draining your vehicle's battery.

The light shines to 100 feet and lasts up to 1.5 hours

making it ideal for car camping, commuting, and vacationing travelers. For a flat tire, stalled vehicle, or other night-time highway emergency, this reliable light can be a lifesaver.

### SpaceSaver Electric Bolt Locks Introduced by Security Door Controls



SpaceSaver Electric Bolt Locks in the Fail-Safe Power to Lock 1000 series and the Fail-Secure Power to Unlock 2000 series have been introduced by Security Door Controls (SDC), according to Richard Geringer, Vice President.

The SpaceSaver fits in 1-3/4" diameter frames with no wires in the door. The locks are mounted in the side jamb or header. They are UL listed as auxiliary locks and 3/4" diameter solid stainless steel bolts are available. With the entire lock concealed, security is greater and installation is faster, easier and more economical.

There are 12 SpaceSaver design models in fail-safe or fail-secure for any application need. Direct bolt through designs are also available for wood frame applications. Optional features include door and bolt position monitoring. Specify 12 or 24 VDC.

Security Door Controls, a leading manufacturer of electric locking hardware and access controls, has been manufacturing and marketing its products for more than 24 years. SDC's products are sold through 27 independent sales agencies to the security and hardware industries. **TNL**



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**GENERAL SECURITY**  
**Test Article #121**

# Interchangeable Core Locks Best Style

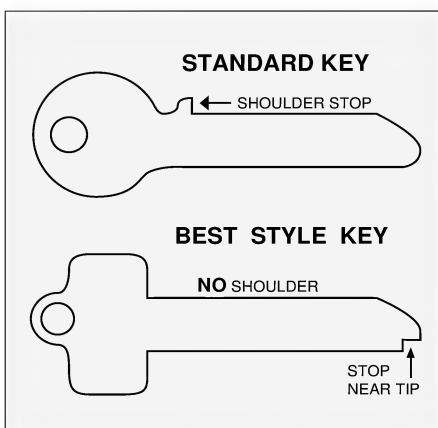
**PART**

**3**

**T**his is the final installment of a three part series on the subject of Best style interchangeable core locks. The final details will include the key stop, the physical process of decoding and pinning, and some unique details (of servicing and construction) for individual Best style cores manufactured by a few of the companies other than Best.

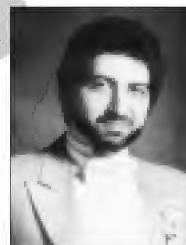
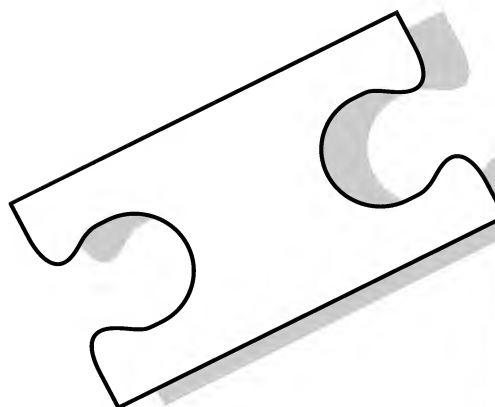
## The Key Stop

The vast majority of keys used for commercial type lock cylinders make use of a shoulder stop to properly position the tumbler cuts (on the key) directly under each of the tumblers in the lock. *Illustration 1*, compares a Best style key to a standard key with a shoulder stop. A Best style key has a notched key stop on the bottom surface of the key blade, just before the actual tip of the key.



**1. The BEST style key stop is on the bottom of the key as opposed to the top on standard key blanks.**

In *photograph 1*, the circular metal plate that is normally riveted to the back of the plug of a Best style core can be seen. The cutout in the plate allows the actual tip of the key to protrude through that opening. The plate also acts as the key stop, while the notch on the bottom of the Best



by  
**Sal Dulcamaro**

style key hits that surface of this plate and prevents the key from going in too far. *Photograph 2*, shows that plate which acts as the key stop attached to the back of the plug. A key has been inserted into the plug and if you look closely, the tip of the key can be seen sticking out slightly from the opening in that plate.



**1. The key stop removed from the back of the plug.**

**B**est style cores come in a variety of lengths, although most of the current production is in the six or seven pin chamber variety. I have seen some much older cores with four or five pin chambers. Because a Best style key is gauged near the tip, the standard length keys (made now) can be used on any length core regardless of how short or long the core is.



**2. With a key inserted, the tip of the key protrudes through the back of the key stop.**

## Rekeying a Best Style I-Core

A Best style interchangeable core can be rekeyed numerous times. It is not, however, rekeyed the same way that most ordinary pin tumbler lock cylinders are.

Most standard pin tumbler lock cylinders are rekeyed by removing the plug retainer (from the back of the cylinder), and then using a tube shaped plug follower to follow out the plug. After reassembly, a new key combination will operate the lock cylinder. A Best style I-Core is not normally designed to come apart. By its construction, the plug is effectively riveted to the other components of the core. Since the plug is not removed, the tumblers are normally unloaded or installed through the top pin chamber openings of the IC lock's shell.

With the notable exception of the Falcon clone of the BEST style cores, a Best style core uses caps that seal each pin chamber individually. To unload the pin chambers (for a previously coded I-Core), the caps must first be removed.

## The Pin Ejector

The caps that seal the top of each pin chamber are essentially a press fit. That means that you can't merely turn a Best style core upside down and expect the caps, springs and tumblers to just fall out of the core.

To rekey a previously coded I-Core, you must apply force to dislodge the pin chamber caps. *Photograph 3*, shows a bottom view of a Best style core. This particular core is a Best compatible, but is actually an Arrow Lock Co., I-Core.

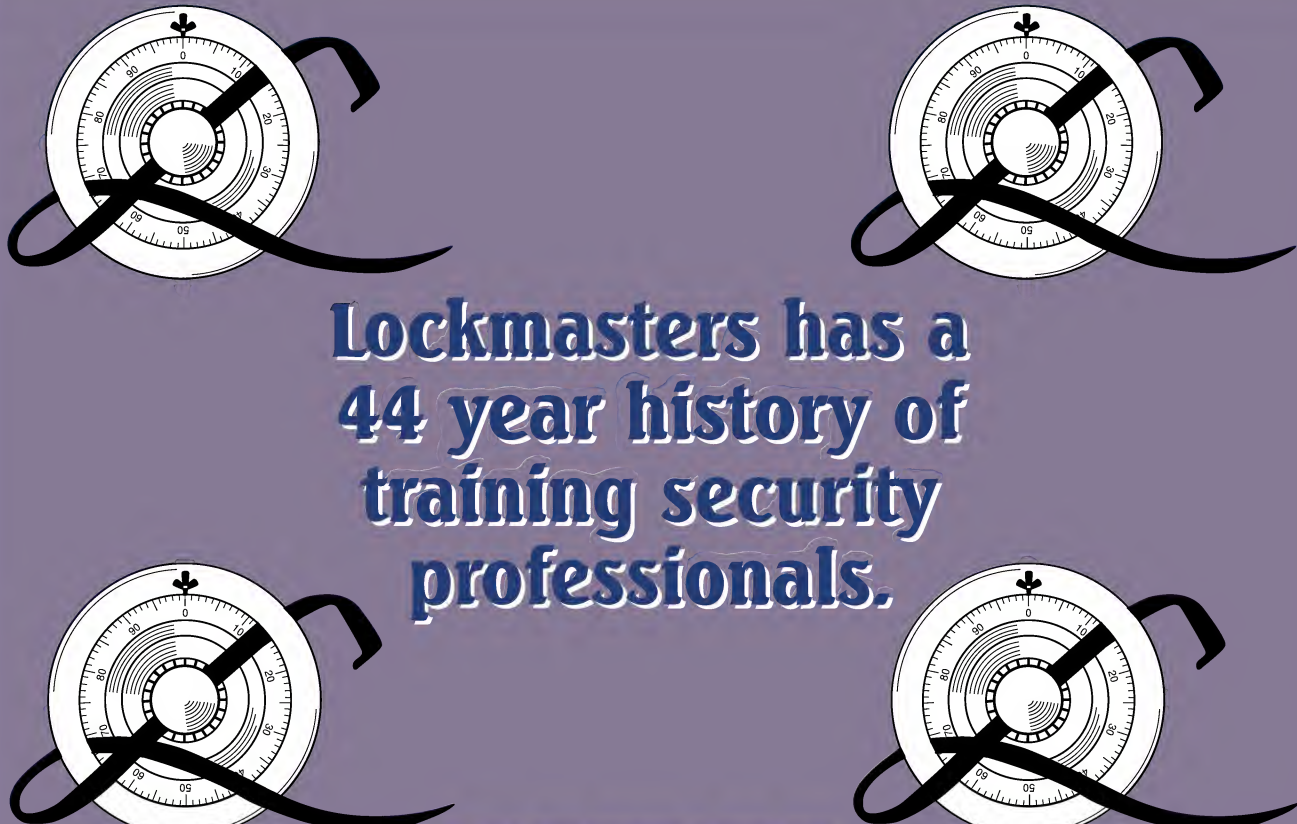
You can see seven holes along the bottom surface of the core. These holes are in line with the pin chamber holes, but they have a much smaller diameter than the .110" dimension for the diameter of a Best Style pin tumbler. That

indicates that the pin tumblers cannot slip through or fall out of the holes. These are pin ejector holes which are used to eject the cap, spring and pins of each chamber. Just to the right of the I-Core is a pin ejector tool used to accomplish the task.

*Photograph 4*, shows how the pin ejector tool fits through a pin ejector hole in the bottom of an I-Core, and eventually (when forced sufficiently) pushes all the way through the top of the pin chamber. If tumblers had been



**3. Bottom view of the lock shows the ejector pin holes.**



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loaded in that particular pin chamber, the pin ejector tool would have first made contact with the bottom tip of the bottom pin. As the tool was forced inward into the hole, the entire pin stack would be pushed toward the top of the pin chamber. Because the cap would give some resistance to being pushed out from the top, the tumbler spring (which is located between the top of the pin stack and the cap itself) would be crushed as additional force was applied. When sufficient force was directed against the resisting cap, it would finally pop out from the top of the pin chamber. After the cap was forced out from the top of the pin chamber, the crushed spring and the various pin tumblers could also be dumped out of the chamber.

### The Capping Block

The capping procedure normally requires a fixture to properly align the caps to the individual pin chambers. *Photograph 5*, shows a capping block that will hold the I-Core in place while the caps are pressed in place at the top of each chamber. On top of the fixture, you can see seven holes that coincide with the seven pin chambers in a Best style I-Core. This fixture can be used with a seven pin core, but will also work with cores that have six or even fewer pin chambers. The capping tool (or punch) is in my hand just to the left of the capping block fixture.

An I-Core has been inserted into the front opening of the capping block fixture in *photograph 6*. After all the pins are loaded in each of the pin



**4. The ejector pin tool has been inserted through the pin chamber ejecting the pins, spring and cap.**



**5. The capping block fixture and capping tool used to cap the core.**

chambers, the tumbler springs would then be loaded. The caps for each chamber would be dropped into the loading holes on the top of the fixture, and then the capping tool (punch) would be used to press the caps in place. The length of the punch is just long enough to press the cap just below the top surface of the core. If the cap was pressed to far into the pin chamber, the tension of the tumbler could increase and make it more difficult for insertion or removal of keys from the keyway. If the cap wasn't far enough in, it could stick out from the top of the core. That could make it difficult to slide the I-Core into a compatible housing.

**T**here are several other BEST style mounting blocks and decapping tools available. The one used here is just one example. I suggest checking with your distributor or attending a trade show to compare the various types available for the one that will best suite your needs.



**6. The capping tool is just long enough to seat the caps in the top of the core.**

### Variations of the Best Style I-Core

The main reason for the existence of the Best clones is to tap into an existing market. For many years now, there have been I-Core locks of different designs made by other lock manufacturers. When a new customer is introduced to I-Core locks for their quick change capability and other advantages, the customer needs both cores and housings to make the

system work. That means that (unless the price difference is very dramatic) any brand of I-Core has an equal shot. Where the Best style core has the obvious edge, is when a customer already is using Best brand I-Cores and all the locks in the facility already have Best style housings.

If you sell a Best compatible product like Arrow, Falcon, KABA Peaks, KSP or others, you have the additional option of selling only cores. Since the housings are already in place, the ultimate financial cost to the customer is reduced compared to a new system which requires not only cores, but also housings and the labor for installation. Because the intent is compatibility, most other brands of

Best style cores are virtually identical in every way, including assembly and servicing procedures.

**F**alcon makes a Best style core that follows most of the rules of Best original products, with a relatively minor alteration. Where virtually all other clones of Best also use caps on individual pin chambers, Falcon makes an I-Core that uses a single piece spring cover that is long enough to cover all the pin chambers together. When using that type of I-Core, you would not use a standard capping block. *Illustration 2*, is of a capping block that is made by A-1 Security Manufacturing Corp. This fixture has two different tops. One is for the standard type with pin chamber caps, and the other is used for Falcon type spring covers.

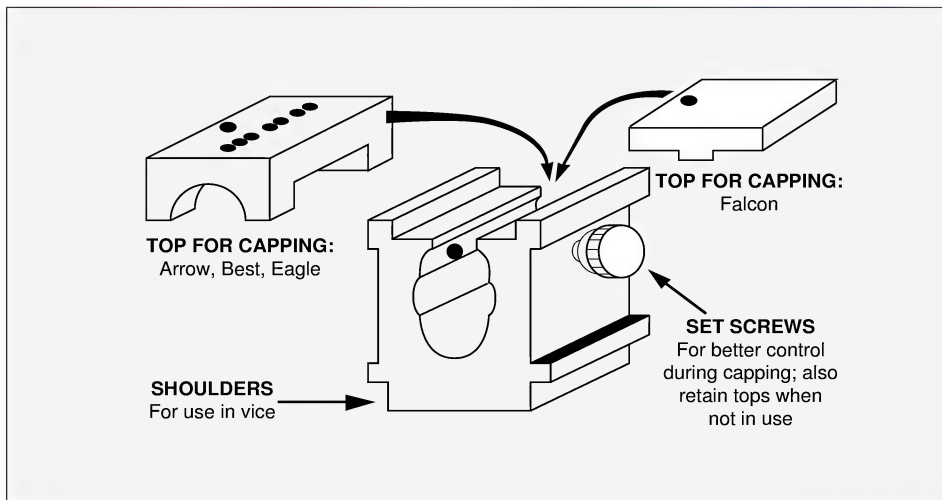
While most companies that make Best style cores and keys try to manufacture most of Best's keyways, a number of them also have their own unique keyways. In those cases, the core would still maintain the Best pin stack and other specifications, but the keyway would not be one that is being made and used by Best Lock Co.

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**2. A capping block made by A-1 Security Manufacturing Corp.**

## Patented Key Control

Most locksmiths are familiar with the "unlawful to duplicate" warning on most Best brand keys. Even the after market key blank manufacturers often place that same warning on their keys. As far as I have been able to determine, there is no law that states that duplicating those particular keys is in any way illegal. It appears to merely be a low budget attempt at key control. They hope that the message on the key will scare people from trying to get duplicate keys made. It's somewhat obvious that the tactic has not been extremely effective.

Best and many other manufacturers have been trying for years to obtain utility patents on their keys to effectively restrict unauthorized key duplication. The problem with a utility patent is that it must deal with more than just appearance. The patented

aspect of the key must be functional. Other brand (non Best style) I-Core locks have had patent protected keys, but most of them used a larger figure 8 profile for their cores. The larger size provided room to add extra functional parts and components. The smaller profile of the Best style core has made it extremely difficult for many manufacturers to add functional components in such limited space.

Until recently, only one Best compatible core could boast patented key control. That product was the KABA Peaks interchangeable core lock, shown in *photograph 7*. The side view of the key, in *photograph 8*, shows the "Peaks" just past the key shoulder and before the key cuts. The Peaks operate a special tumbler at the very front end of the core. That tumbler can be seen at the top of the keyway in *photograph 9*. If you look at

the side view in *photograph 10*, you will see the narrow space at the front of the core where that pin chamber is located. Because of the functional design, KABA was able to obtain a utility patent for the "Peaks," which also gave their keys patent protection. Anyone who makes a KABA Peaks key without authorization will be in violation of the patent.

## Best's Legal Battle

Best realized that the warning on Best keys didn't provide true key control and like a number of other companies, they had their engineers working on a patentable design for their keys. Just a few years ago, they were issued patents on some new products. They proceeded to introduce the patent protected key by Best, only to be rudely challenged by ILCO. ILCO challenged the validity of Best's patent and proceeded to manufacture key blanks that would work with Best's new patented product line.

Best took ILCO to court, and quite recently, ILCO ultimately prevailed with most of their challenges to Best's issued patents. The current status of Best's patented keys is still somewhat up in the air. Only time will tell how much, if any, of the patents will remain in force.

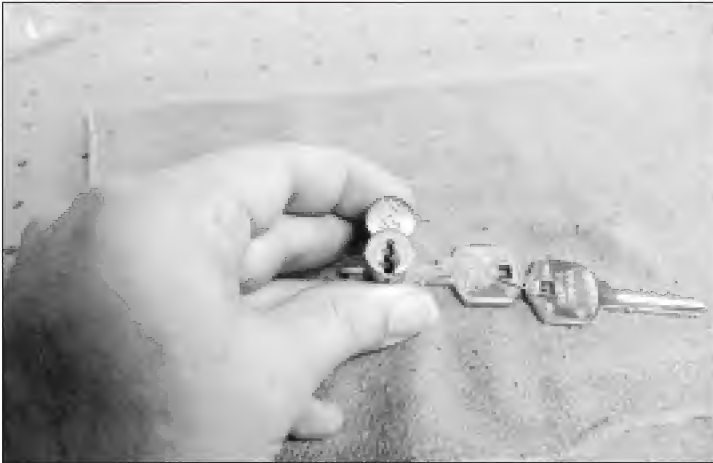
Medeco has recently introduced a Best compatible core that claims patent protection for the purpose of key control. I have heard that another company may be on the verge of introducing a Best compatible core with patented key control. Many of these products have been a long time coming, so believe it when you see it.



**7. A KABA Peaks I-Core lock.**



**8. The name Peaks refers to the peaked protrusion just past the shoulder of the key.**



**9. The Peaks on the key operate a special tumbler at the front of the core.**



**10. The added pin chamber located at the front of the core allowed KABA to obtain a utility patent for the Peaks lock.**

#### Manufacturers References:

##### Best Lock Corp.:

6165 E. 75th Street P.O. Box 50444,  
Indianapolis, IN 46250. Phone: (317)  
849-2250

##### NT Falcon Lock:

2650 Orbitor St., Brea, CA 92621-6265.  
Phone: (800) 266-4456

##### KSP:

33 Hermon St., Worcester, MA 01610.  
Phone: (508) 798-3200

##### Arrow Architectural Hardware:

10300 Foster Ave., Brooklyn, NY 11236.  
Phone: (800) 221-6529

##### KABA Security Locks Inc.:

Old Turnpike Rd., Southington, CT  
06489. Phone: (203) 621-3601

##### A-1 Security Manufacturing:

3001 W. Moore St., Richmond, VA  
23230. Phone: (804) 359-9003

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**AUTOMOTIVE SECURITY**  
**Test Article #122**

*by Hankman*

# Servicing the 1996 Mercury Tracer



1. In 1991 through 1995, the Ford Escort and the Mercury Tracer both used the Ford 10 cut codes and keys. In 1996, the Mercury Tracer changed. The Escort, Aspire, and the Tracer are all built in Korea by Kia Motor Co.

**IGNITION**



2. The center section of the shroud does not have to be removed as I did here, you can access the screw with the rubber cover in place. This cut out is if the car has a tilt wheel. If it did, a pull lever would be here rather than a rubber insert.

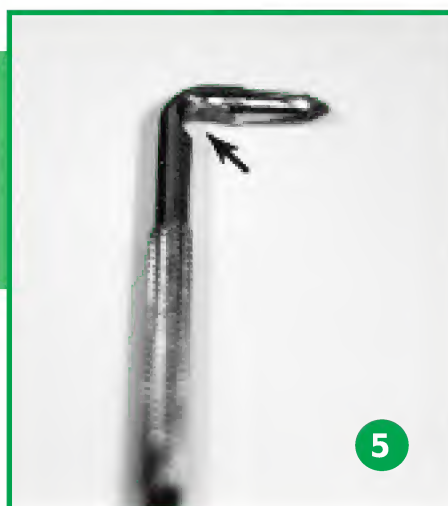


3. Remove the screws from the shroud and you can remove the top and bottom parts of the shroud.

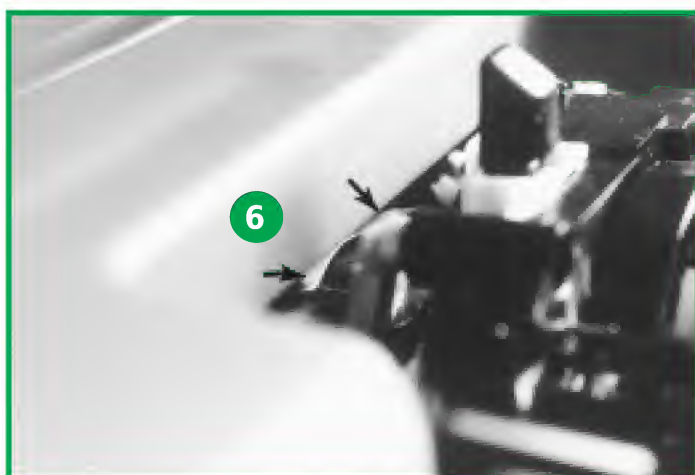




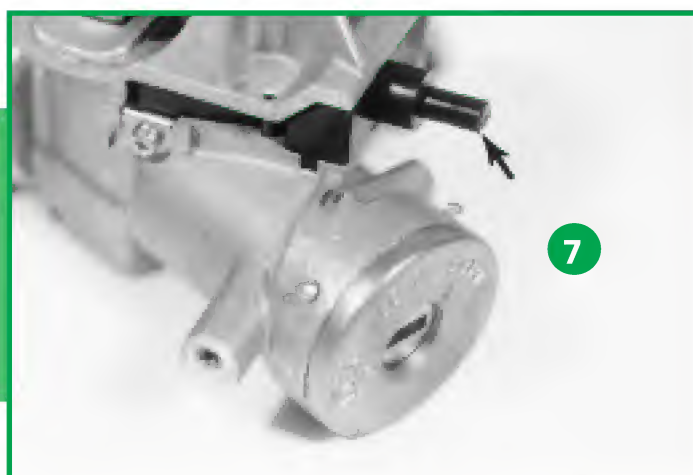
**4.** The bottom arrow on the right shows one of the roll pins which holds the key cylinder in the lock. You will need to cut behind these pins and pry them out to remove the cylinder. The black arrow on the top right and the white arrow on the top left show location of two phillips screws that must be removed if you are removing the lock from the column. This car has two air bags, do not work on this ignition lock without first disconnecting the battery.



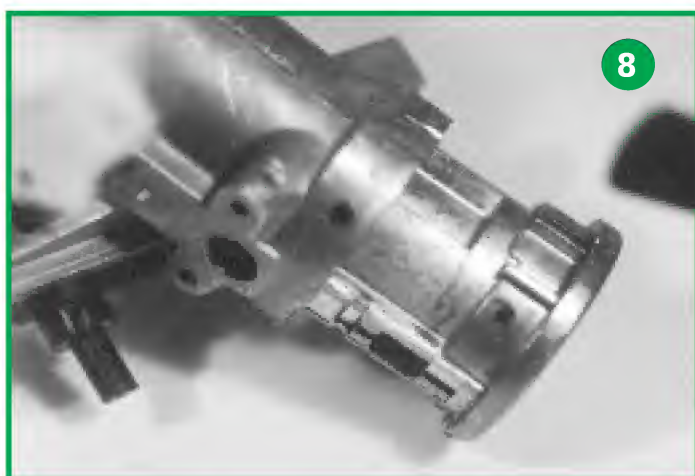
**5.** To remove the two screws in photograph 4, I use an off-set screw driver. The one shown by the white arrow is down in a hole. I used a cone grinding wheel with a Dremel tool and cut away part of the off-set driver as shown, this gave me the length on the driver to reach in the hole and remove the screw.



**6.** These two arrows show the location of the two shear head bolts holding the lock on the column. They are not the easiest to get at, however with a little patience it can be done.



**7.** With the lock removed you can see two of the roll pins pulled up. The arrow shows where the transmission cable hooks on to the lock.



**8.** With the roll pins removed the key cylinder will come out the front.



**9.** This is the key cylinder removed, be careful of the spring in the center of the plug. This lock is spring loaded and must be pushed in to turn it from off to the lock position. The key can only be removed in the lock position.

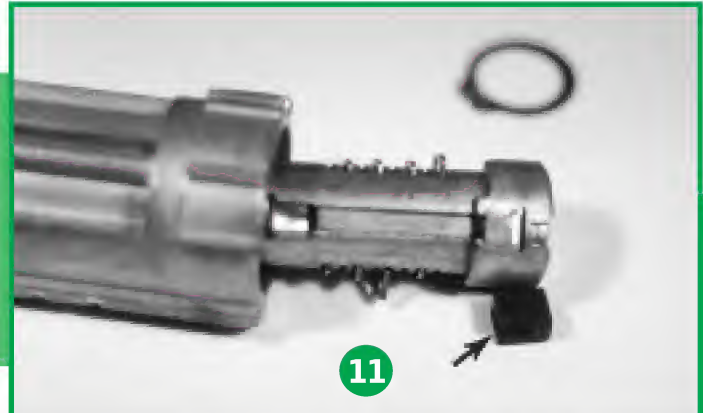
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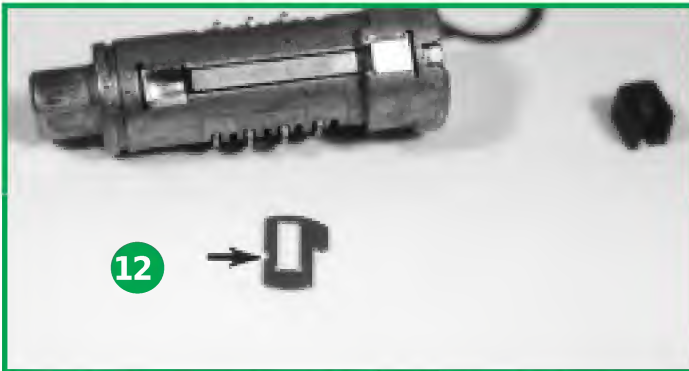
Continued from page 35



10. Remove the tru-arc ring from the rear of the plug.



11. The plug will now come out the front, be careful of the black buzzer piece, it will fall out and it must be in the plug when you put it back together.



12. This plug has a long side bar in it and it is also a double sided plug with eight tumblers, four on one side and four on the other side. These tumblers have a notch on the side for the side bar. There are ten cuts in the key and what you have in the ignition is the #1 through the #8.



13. The door lock cylinder is on the outside door panel behind the door handle.



14. To remove the lock cylinder you must first remove the inside door trim panel. This panel is not hard to remove.



15. Remove the inside window handle using your clip removal tool shown.





**16.** Remove the screw holding the inside door handle and the trim.



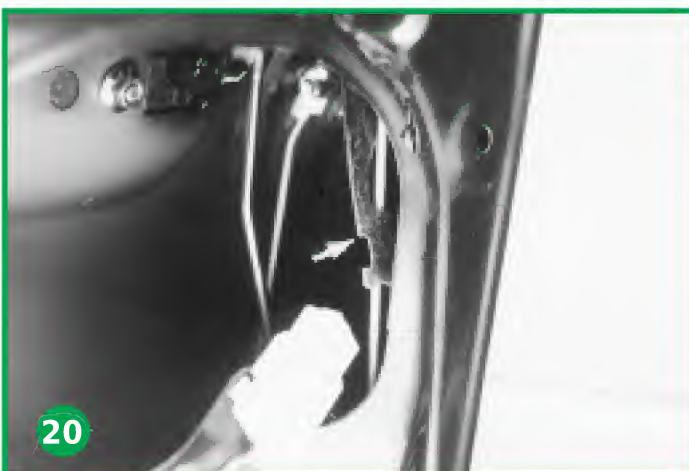
**17.** Disconnect the linkage rod from the door handle and remove the handle and the trim., it is one unit.



**18.** Remove the two screws from the arm rest shown by the black arrows. Now use your panel clip tool, white arrow, and pry the panel off down both sides and the bottom.



**19.** This is the plastic weather cover. Start at the top right corner and pull it back down the right side and across the top.

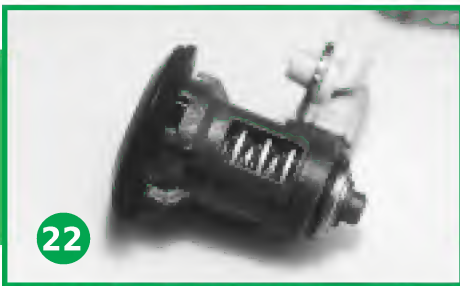


**20.** Shows there is a vertical locking rod and it is wide open. I am using a Slim Jim to get on the rod and lift it up to open the door. There are several other tools that can be used to lift the rod, whatever is the easiest for you.



**21.** The top arrow shows a horse shoe clip holding the lock cylinder on the car. The bottom arrow shows the linkage rod hooked to the back of the lock cylinder. Disconnect the linkage rod and pull the clip up, the cylinder will now come out the front.

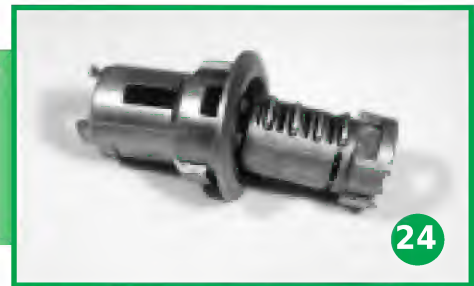




**22.** This is the lock cylinder removed. There is a window in the bottom of the case and all the tumblers can be read through it to make a key.



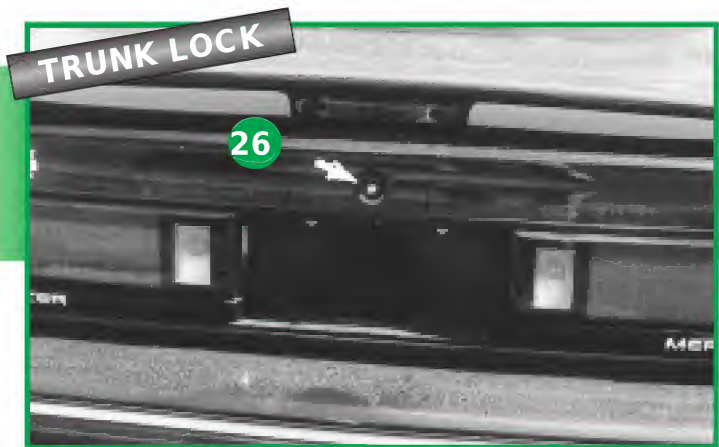
**23.** Remove the "E" clip from the back and the tailpiece. Then remove the face cap from the front of the cylinder.



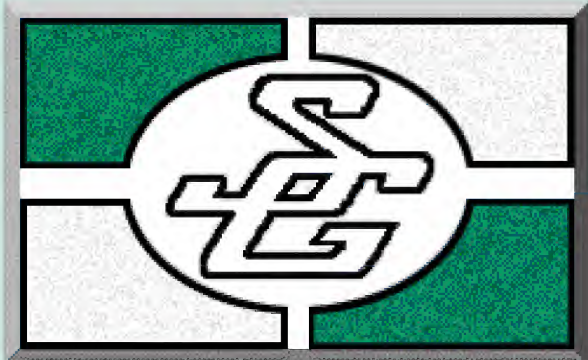
**24.** The plug will now come out the front.



**25.** This plug does not have a side bar, it is double sided with eight tumblers. The eight tumblers in this lock are the #3 through #10, it does not have the #1 & #2 which are in the ignition, therefore when making a key from this lock cylinder you will have to either impression the #1 & #2 or progress them to have a key which will work all the lock cylinders on the car.



**26-** The trunk lock cylinder is located in the center of the trunk lid.



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27

27. There is no trim cover on the inside of the trunk lid, it is wide open and the lock cylinder is very easy to remove. There is a long horse shoe clip holding the cylinder in, remove the clip.



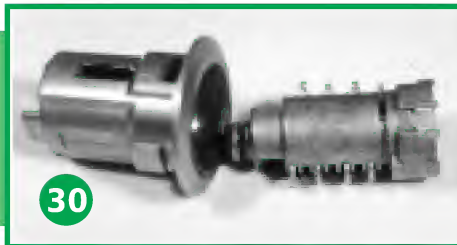
28

28. Disconnect the linkage rod shown and the lock cylinder will come out the front.



29

29. The trunk cylinder also has a window in the bottom of the case and it comes apart the same as the door cylinder.



30

30. This plug is the same as the door plug. It is double sided and has the same eight tumblers #3 through #10.

**NOTE:** The early 1996 Ford Escort features the same locks and specification as the 1995 locks. The late 1996 Escort will feature the same locks as the 1996 Mercury Tracer. Be aware of this mid-year change on the Escort.

**Code Series:** 10100-12283

**KEY BLANKS:**

Curtis: H65

Ilco: X221, H65

Silca: FO31R

Number Of Cuts: 10

Number Of Depths: 5

Starting Cut: .098

Cut to Cut: .0825

Spacing: 1-.098, 2-.181, 3-

264, 4-.347, 5-.430, 6-.513, 7-

.595, 8-.677, 9-.761, 10-.844

Depths: 1-.315, 2-.299, 3-.283,

4-.268, 5-.252

HPC Code Card: CF68

Curtis Cam: MZ5

Curtis Carriage: MZ5A

Framon: Block #5

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**ELECTRONIC SECURITY**  
**Test Article # 123**

**This  
month  
we complete  
the installation.**

# Securitron's DK-26

## Part 2

by **Jake Jakubowski**

**L**ast month I told you all about the new features that Securitron has built into its DK-26 touch pad and CPU board that was released late last year as a replacement to the DK-25P. I also mentioned that it would be difficult to improve on what I already considered a great product, but Securitron managed to make the DK-25P take a technological back-seat to the DK-26.

The DK-26 installation that I'm going to show you consists of five main components - at least for the application that I field tested this unit in. *Photograph 1*, is comprised of the Securitron Magnalock 62-24, a PB2E non-illuminated exit switch, a PSP-24 plug-in rectified transformer, the new clearly marked CPU board and a DK-26 touch pad with its distinctive three LED's, (Red, Orange and Green) across the top.

This unit, along with two auxiliary exit switches, was installed in a large church that had a day-care center. The DK-26 was placed on the main



**1. A collage of the Securitron products used for the day-care center. Included is a PSP 24 rectified transformer, the new DK-26 Touch Pad used in the installation, part of the DK-26 CPU board, PB2E Exit switch, and Securitron's Model 62 Magnalock.**

entrance door to control traffic through that door by admitting church staff (who had their own codes) and by requiring all others to ring the door bell (incorporated into



2. Oblong hole cut in door frame to accommodate touch pad cable.

the DK-26 Touch Pad) to gain admittance.

When I install a Securitron DK-26, the first thing that I install is the touch pad. To do that, I first cut an oblong hole in the door frame with my Dremel tool (See photograph 2.) This hole will allow for the differences in cable placement from one touch pad to another. Next, I drill a 1/2" hole straight through the door jamb to the interior. Photograph 3, is the hole on the interior of the jamb, as well as the



3. The metal plate attached to jamb is the Wire Mold mounting plate. The hole to the left is to run the touch pad cable through.



4. The sequence for mounting a Securitron DK-26 touch pad to frame.



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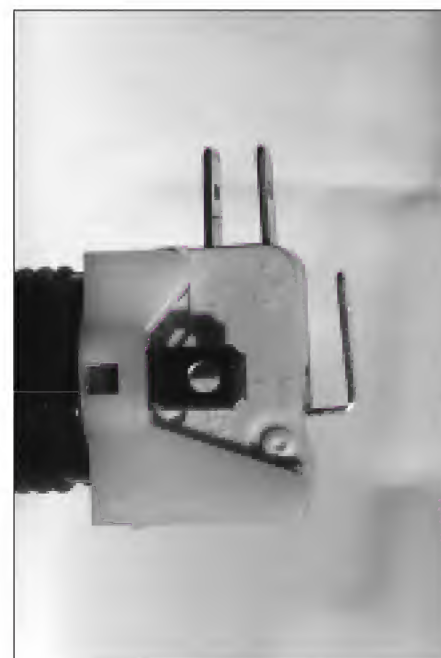




**5. Wire mold junction box with touch pad cable and pull wire is visible.**



**6. PB2E exit switch wired and mounted to Wire Mold junction box.**



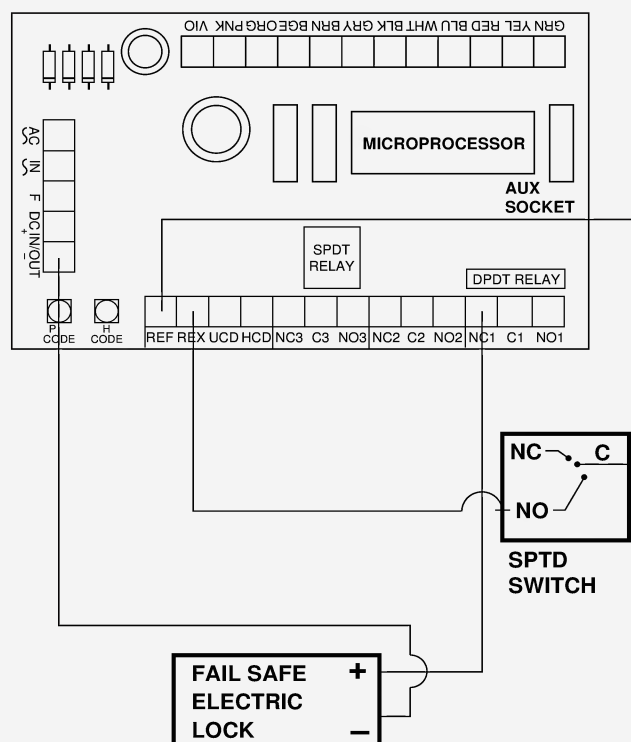
**7. The business end of the PB2E.**

mounting plate for the Wire Mold hardware and junction boxes that I use when installing an access control unit.

From left to right in *Photograph 4*, is the process for mounting the DK-26 touch pad to the door jamb. After drilling the hole through the jamb, I locate and install the top mounting screw for the touch pad. I then feed the cable through the hole to the interior of the jamb, after which I slip the DK-26 over the top mounting screw (which is concealed by the touch pad.) Push the touch pad up tight against the jamb and secure it with the bottom mounting screw (Securtron even supplies tamper resistant security screws for this purpose.) Cover the screw with the DK-26 decal that can be seen below the touch pad.

*Photograph 5*, is the touch pad cable coming into the Wire Mold junction box on the inside of the door frame. The small wire to the right of the opening in the junction box is my "pull" wire that I will use to pull the cable and other wires that go from the switch to the CPU board up into the ceiling cavity where I have located my CPU box and power supply wires.

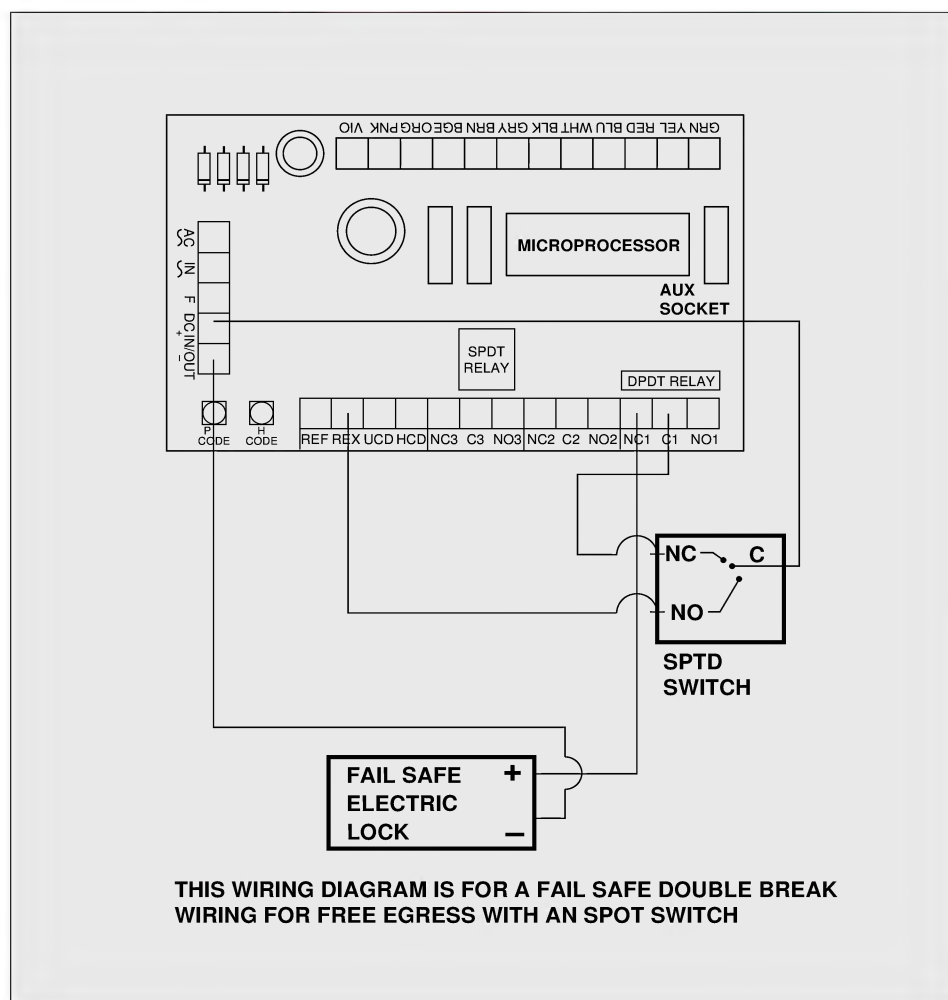
*Photograph 6*, is the primary exit switch on the door jamb wired and ready to go.



**A N/O SWITCH CLOSING BETWEEN "REF" AND "REX" CAUSES TIMED RELEASE OF THE DOOR**

**Illustration 1. An N/O switch closing between "REF" and "REX" causes timed release of the door.**

Continued from page 44



**Illustration 2. This diagram is for double break wiring for free egress with an SPDT switch.**

A neat installation can be achieved when you use Wire M old products to hold your switches and conceal the wiring on this type of installation. Wire M old products are available from most electrical supply houses and some home centers.

Photograph 7, is the business end of the PB2E exit switch. Notice that there are terminals for Normally

Open, Normally Closed and Common leads. Illustration 1, is how a PB2E exit switch is wired in a "REX" (Request To Exit) function. As you can see, a wire runs from the Normally Open terminal of the switch to the REX terminal of the CPU board, and a second wire runs from the Common terminal of the switch to the "REF" terminal on the CPU Board. When the exit button is depressed,

the Magnalock is released for a predetermined period of time.

Since the possibility exists that even on a fail-safe lock (unlocked when power is shut off) an electrical malfunction could cause the REX function to malfunction. Securitron recommends that you wire the PB2E in a "double break manner for free egress. Since the PB2E is a SPDT (Single Pole Double Throw) switch, Illustration 2, shows how to wire the switch for this purpose. The Normally Open terminal of the switch is still wired to the REX terminal of the CPU board, but the Common terminal of the switch is now wired to the "DC IN" terminal of the CPU Board rather than the REF terminal, and the Normally Closed terminal of the switch is also wired to the C1 terminal of the CPU board.

When the exit switch is activated, the Normally Closed contacts open which releases the fail safe lock. At the same time, the Normally Open contact directly activates the REX input. This de-energizes the lock control relay which releases the lock a second time for the amount of time that has been programmed into the CPU. Consequently, if the DK-26 suffers a failure, the exit switch can still release the lock for safety. Hey! It's really not complicated. If this ol' boy can do it, anybody can. Besides, if you get into trouble, Securitron has a great technical staff to help you. And, the call is toll-free.

The next step, for me anyway, is to install the 62 Magnalock on the header of the door jamb, and the "Shoe Plate" on the door. Securitron provides templates with each 62 Magnalock that you install which makes the installation of the 62 relatively simple. The hardest part about mounting the Magnalock manifests itself when you have to deal with a concrete filled header, but once you have your holes placed the rest is easy.

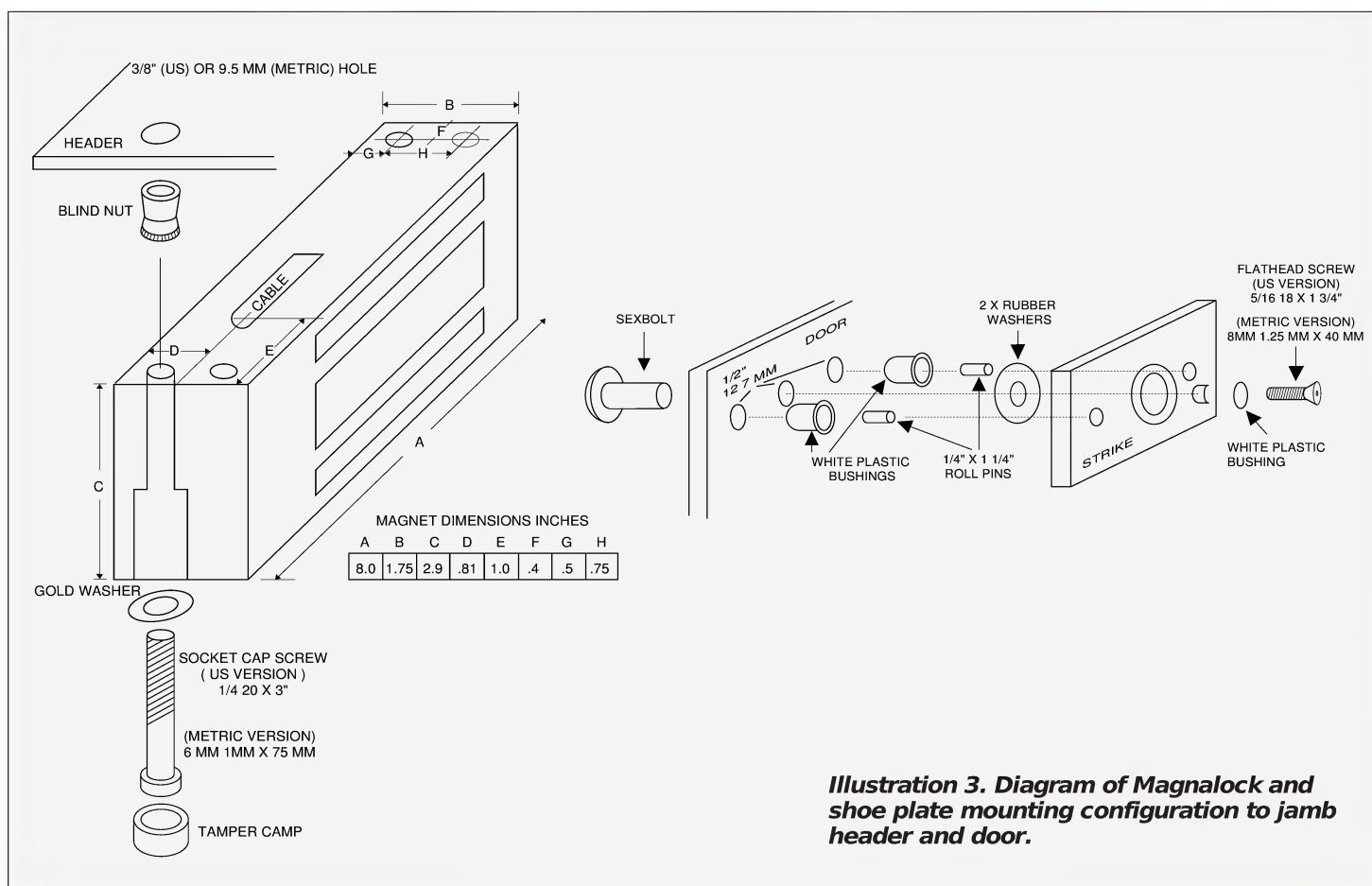
Illustration 3, is how the 62 mounts to the header with "blind nuts," the shoe plate mounts to the door. Securitron supplies the mounting hardware necessary to place the 62 on the door frame. Photograph 8, shows a blind nut in place and a spacer plate that was drilled and taped to accept a 62 Magnalock. Securitron supplies a tool to install the blind nuts.



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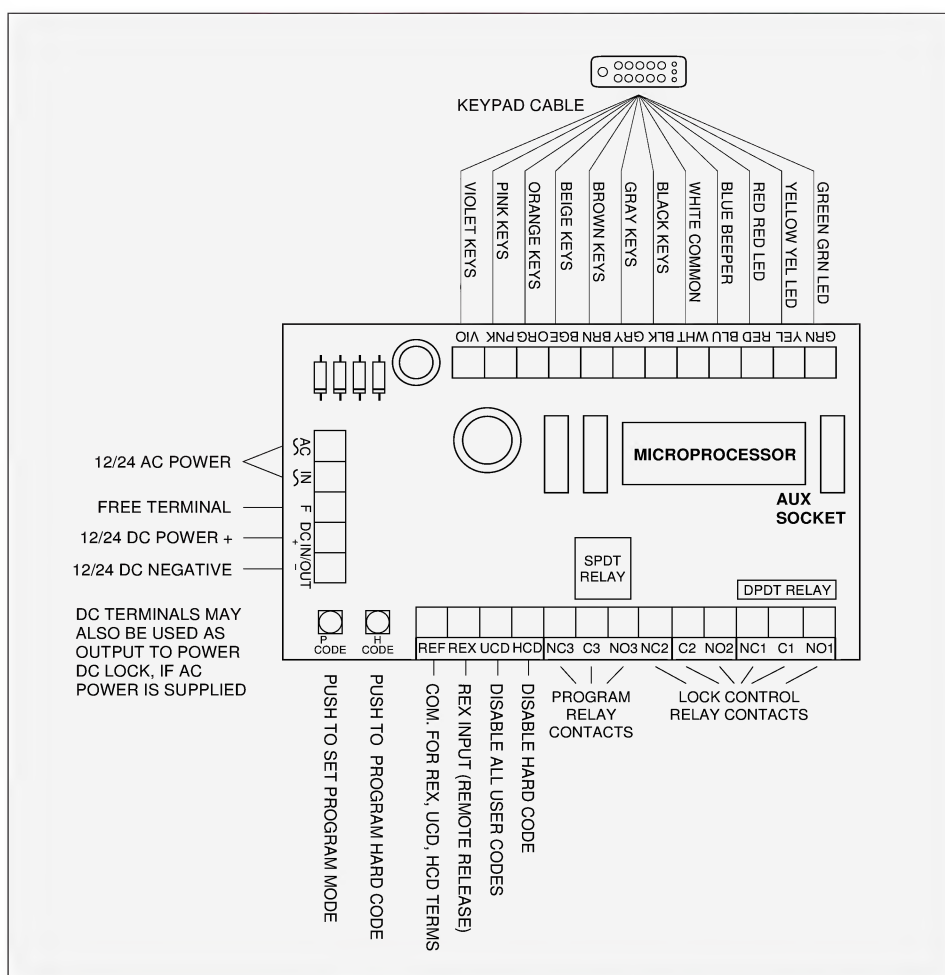
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The next thing to install is the CPU Board which is simple enough. Just mount the board where you want it and then wire everything - the touch pad, exit switches and power supply - into the CPU. *Illustration 4*, is an overview of the CPU Board and in my opinion, shows where the DK-26 has it all over its predecessors. Note that the touch pad wiring is no longer "Blue lead to terminal 26", etc., but, "Violet to Violet", etc. Sure makes it easier to wire things up as far as I'm concerned. Also note that 24VAC comes into the appropriately marked terminals on the left of the CPU and the 24VDC exits below. Everything is clearly marked and the wiring directions are easy enough to understand.

Once you have everything installed, wired, plugged in and all but buttoned up, it is time to test the unit. The first thing I do after powering up the unit is to see if the door is actually locked. With power supplied to the unit, the lock should be energized and securing the door closed. The next step is to see if the exit switch will release the door. If it does, then

**Illustration 4.**  
**Overview of CPU board.**



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**Illustration 8. Holes drilled in header to receive a model 62 Magnalock. Hole left has a blind nut installed. Hole on right has been drilled and taped.**

proceed to programming the lock. If it doesn't, then go back and check to see if you have miss-wired something, or if you have inadvertently neglected to couple a connection. After making sure the lock and exit switch(es) activate and deactivate properly, go to the programming portion of the installation.

**S**ince the DK-26 has much greater capabilities than its predecessors, the programming does take a little

longer than it did with the DK-20, 20+ or 25P. The DK-26 is keypad programmable and the program I'm outlining here presumes that you have already set the unit up with your own Program Code. (Securitron supplies complete, in-depth instructions for setting the initial codes with each DK-26) What I outline here is how to add or delete up to 59 individual users codes and is the programming feature that you should teach the day-to-day users since they do not have to access the CPU to make any changes.

1. Enter Program Code, followed by the Bell Key and note rapid yellow flashing LED which indicates it is in the program mode.
2. To add a new user code, enter user prefix 01 through 59 followed immediately by a 2 to 7 digit user code. To delete a user, enter user prefix but DO NOT enter any other code.
3. End the entry by pushing the Bell Key.
4. Note two red LED flashes for confirmation and note that the rapid

yellow LED flashing returns.

5. Press Bell key to terminate program mode.

6. Re-enter new user code and the door should open.

Simple enough wasn't it? As far as I'm concerned, the DK-26 is about the smartest and toughest digital access control device for single doors that you'll find.

If you have an unusual wiring situation requiring remote or auxiliary exit switches and you're not sure how to properly wire it all together, you can call Securitron and explain your application and Securitron will fax you a wiring diagram for your specific application. This is a great service, especially for those who do not hold an electronics degree, which is most of us.

For more information on the DK-26 or other Securitron products, contact your favorite distributor or call Securitron at 1-800-624-5625. Tell 'em: "Jake sent me!"

See y'all next month. **TNL**



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# BEGINNER'S CORNER

## Servicing Common Cam Locks



by  
**Eugene Gentry**

**A** locksmith once told me that he did not think there was much money in messing with cam locks. However, I don't agree. I think there is tremendous opportunity for any locksmith to make money in cam lock servicing as well as installation.

pin tumbler. (See photograph 1). They are used in mail boxes, chests, electric boxes, money boxes, wood cabinets and file cabinets. Requests for services on the locks range from openings, key changes, broken keys and lost key replacement.



**1. Various styles of cam locks.**

A bar manager customer of mine recently called and wanted locks changed on eight cabinet drawers and he wanted the same key for all eight locks. Two of the existing cam locks had a tubular key. The other six were keyed alike and not designed to be serviced because the cam was riveted to the plug.

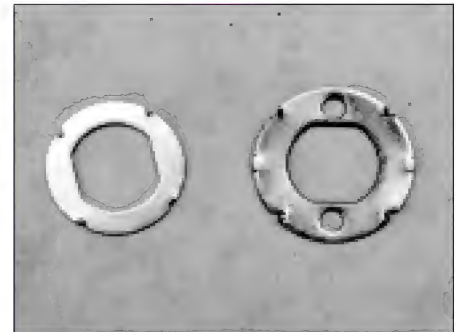
The only logical thing to do in this situation is sell the customer eight new keyed-alike cam locks. I would also take the opportunity to suggest key retaining locks or high security cam locks. This would greatly enhance the profit margin for me as well as increase the security for the customer. I would say this would be fairly good money and just one example of how you can make money servicing cam locks.

There are a lot of cam locks in service, some are wafer and some are

The cam lock is quite easy to replace. On the mail boxes, only a clip on the inside of the metal door holds the lock in place. A quick twist of the screw driver removes the clip. The metal door has a double D hole, it is formed this way so the lock can't be turned in the hole. Most of the metal doors with preexisting locks have this pre-formed hole.

Cam locks installed on wooden doors are installed by first drilling usually a 3/4" round hole. The lock is then secured by installing a double D spur washer that has prongs and a large nut. (See photograph 2). When the nut is tightened, the prongs on the double D spur washer dig into the wood and prevent the lock from being turned in the hole.

On the inexpensive locks, the cam is secured to the plug with a rivet and is not designed to be dismantled. It is



**2. Two styles of double "D" spur washers for wood door installation.**

not advisable to drill the rivet to disassemble and service the lock. (See photograph 3). To make a new key for this type lock, you could impression it or read the wafers.



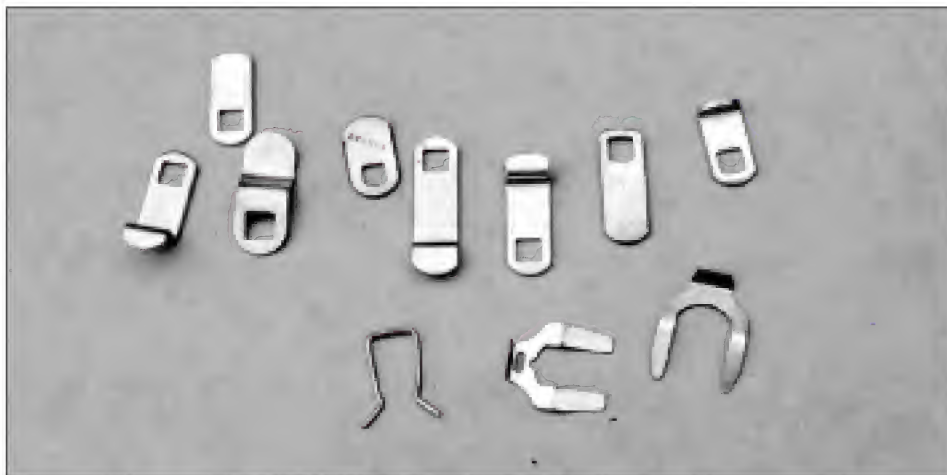
**3. The first two cam lock tail piece cams are secured by a screw. The one on the right is secured by a rivet.**

The better quality cam locks have a screw or nut which secures the cam to the plug. This style can easily be disassembled for servicing.

**I**f you are doing a new installation, you will need to use the type of cam suitable for the application. (See photograph 4) Three things are important on a new installation; the length of the lock, the cam rotation, and the style of cam. On most wood doors, a 3/4" hole is required, and a double D spur washer is used to keep the lock from turning. The length of



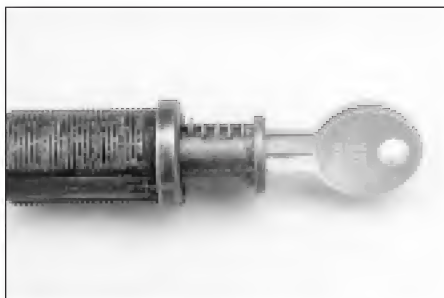
Continued from page 54



4. The various shapes and sizes of cams and retaining clips.



5. A dismantled cam lock.



6. Wafers extend above the plug shear line when a blank key is inserted.

the cam is determined by the location of the striker. This can be a ledge, frame, or divider that the cam will lock behind. A striker plate can also be installed or a slot in the metal can be made.

If you only occasionally install cam locks in metal doors, you will somehow need to shape the hole in a double D design (with two flats) to prevent lock rotation. One way of accomplishing this is by drilling the hole to the width of the two flat sides of the lock case. You could then proceed to hand file the hole into the shape of a double D.

Another option is to purchase a double D punch from HPC. The number for the punch is HDP-4, available through an HPC distributor. This punch was featured in the August 1995 issue of the National Locksmith.

Photograph 5, is a dis-mantled wafer cam lock. Note how the plug slips out of the case when the cam has been removed. This type of cam lock is easy to make a key for. Photograph 6, shows how the wafers extend above the plug when a blank key is inserted. To make a new key, marks are made on the blank by pushing down on the wafers when the blank is inserted. The key is then filed at each cut until the wafers are even with the plug.

On the average, cam locks require little investment to stock and only minimal skills to service. With the huge number of applications for cam locks, there are lots of opportunities to upgrade, key alike, rekey and replace existing products. This can only mean more profits for you.

To help you learn more about the different types and styles of the cam locks, obtain catalogs and information from your suppliers. **TL**



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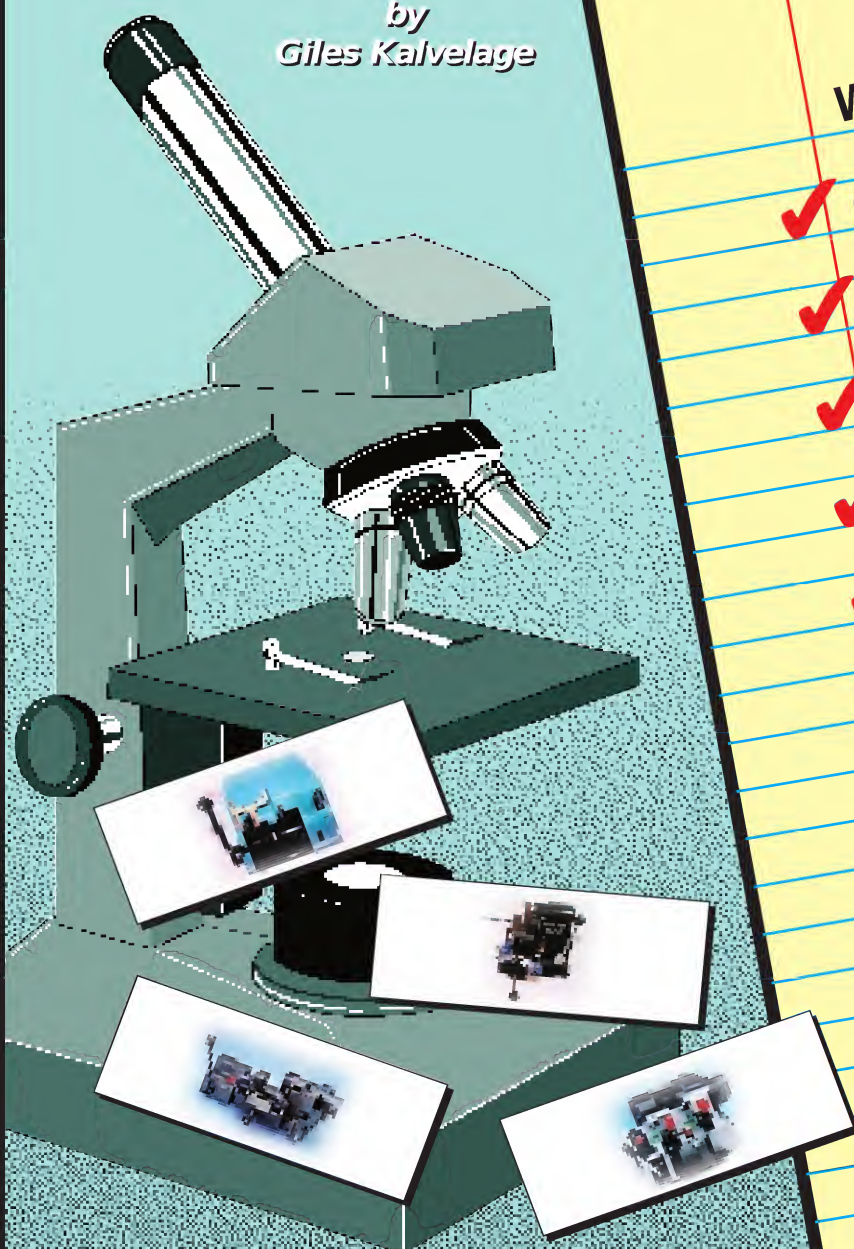
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- ✓ carriage travel.
- ✓ RediLine compatibility.

Find out which one  
will best fit your needs.

**The National  
Locksmith Labs**





### **Key Machines: Testing Their Mettle!**

Once again we're taking the equipment you use everyday and putting it to the test. Every locksmith has at least a few machines taking up valuable bench space, and its important that the machinery you use is as accurate, fast and durable as possible.

No, we didn't let Marc or Greg blow torch, freeze, bath in acid or drop any of these machines from the top of the Empire State building. We also hid the keys to the fork lift. (After all, we had to return these key machines!) However, in this article you will see that we put a number of key machines to speed and accuracy tests. Read on and see how they performed.

#### **Key Machine Styles:**

Key duplicating machines come in three styles, manual duplicator, semi-automatic duplicator, and automatic duplicator. Each style of duplicator has its own qualities of general advantages and disadvantages.

#### **Manual Duplicating Machines:**

This type of machine requires the operator to hold the carriage and key vises or jaws, against the cutter and guide dog/ stylus and manually glide the carriage to duplicate the key. One of the most appealing aspects to this type of machine is the cost. Generally, manual machines cost less than their counter-parts. The other advantage to a manual machine is the ability to duplicate flat steel keys. A flat steel key cannot be duplicated by most semi-automatic or automatic machines.

#### **Automatic Duplicating Machines:**

This category of key duplicators are generally the most expensive, but it does the work for you. Insert a key blank, press a button or flip a switch and the machine does the rest. The design helps to prevent fingers from being inadvertently dipped into the cutter wheel and provides a constant force against the copy dog/ stylus and cutter wheel, eliminating force variances from multiple operators. The drawback to automatic duplicators is that these machines have a tendency to duplicate slower than manual or semi-automatic duplicators.

#### **Semi-automatic Duplicating Machines:**

The semi-automatic duplication machine is an attempt to combine the best of both the manual and the automatic machine. Most semi-automatic duplicating machines hold spring tension on the carriage assembly to provide for a constant force against the copy dog/ stylus and the

cutter wheel, regardless of the operator. The operator will throw a lever which will cause the carriage to glide the original key across the copy dog/ stylus and the key blank across the cutter wheel. The operator controls the speed, and usually the direction the carriage will travel from the lever.

#### **Test Procedures:**

Because everyone has different needs, these tests are intended to give the reader a feel for which machine may be suitable for their own requirements. Key machines are listed in alphabetical order.

We tested for duplication speed, key generations, copy dog/ stylus wear on the original key, visual duplication results, vise/ jaw clearance, carriage travel, and RediLine® 500 watt compatibility.

#### **Duplication Speed:**

This was accomplished by duplicating five key blanks. All duplicate keys were shoulder gauged using key guides or guide forks, depending on the machine. Brass key blanks were used in all tests. All duplicate keys must work the lock or the entire test was repeated without penalty. A Lori mortise cylinder with a Weiser keyway was used. Timing was from the insertion of the first key blank through the removal of the fifth key blank.

#### **Key Generations:**

All machines and cutters tested met or exceeded our expectations. We took a factory cut 5-pin Schlage key, with an original brass Schlage 5 pin lock cylinder, and used Schlage nickel silver 35-100-C key blanks for duplication. The key machines were factory calibrated or were tested for accuracy using the normal adjustment procedures as described by most machine manuals. Calibrations were intended to get the most generations of keys possible. Key generations continued until a duplicated key did not work the lock. When the duplicate key did not work the lock, that key was discarded and a new attempt at that generation was made. If the second try at that generation worked, the test continued. If it failed, the test was stopped noting the last generation of the key which operated the lock. After the test was completed, the machines were again tested for calibration and the complete test was again performed. The best of the two performances are given.

#### **Copy dog/stylus wear:**

A brass key blank was placed in the vise under the copy dog/ stylus. The semi-automatic lever for the carriage return was shifted back and forth across the blank about 3/4 the length of the key blade 100 times. The 3/4 key blank length was necessary to show photographically wear on the key blank. Measurements were also taken of the blade to determine wear.

#### **Vise/Jaw Clearance:**

This is the approximate measurement from the right side of the left vise/ jaw to the left side of the right vise/ jaw. Its intent is to indicate how much room is available to insert a key or key blank.

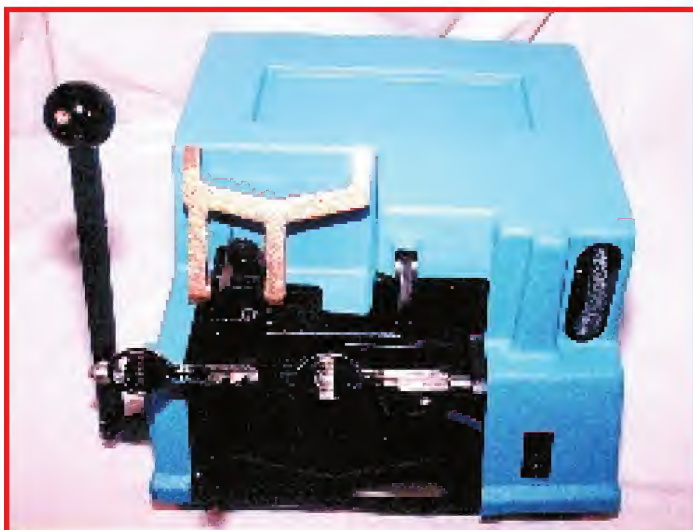
#### **Carriage Travel:**

This is the approximate distance that the copy dog/ stylus and the cutter wheel can travel to cut a key.

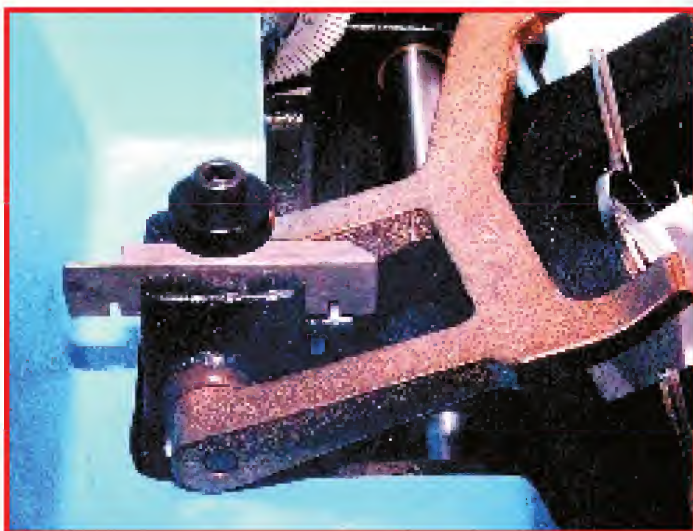
#### **RediLineR 500 Watt Compatibility:**

The machine was connected to a RediLineR 500 watt generator. Did the key machine work or not?





**1. The ESP 3000 was the easiest to use with depth keys.**



**2. The ESP 3000 stylus can be converted to a slotter stylus. A very nice feature.**



**3. 10 key generations were accomplished on the ESP 3000.**

### Roll Out the Machines

#### ESP 3000 Semi-Automatic: (Photograph 1.)

This machine is the only one of the machines tested which can also double as a purely manual machine. With optional cutter wheel, it can also be converted into a slotter machine by inverting the stylus (Photograph 2.) Its true

single angle cutter allowed for the best duplication of the General Motors key. The gauge fork is permanently adjusted to within .001" spacing. Depth adjustments can be made with the aid of an adjusting screw, after a set allen screw has been loosened.

While this is the only machine we tested in which the carriage did not lock at all, the machine cut well and traveled easily during its cutting cycle. Every time a key is duplicated, the semi-automatic feature must be reset. The deburring brush comes standard on this machine and a plastic cover enhances the beauty of the machine and makes for easy cleaning.

#### Statistics

Duplication Speed: 1 min. 57 sec.

Key Generations: 10 (Photograph 3.)

Visual Duplication Appearance: Very good. Excellent on GM keys.

Copy Dog/ Stylus Wear: Impression marks but no measurable blade wear.

Vise Clearance: 2.85 inches.

Carriage Travel: 2.8 inches

500 W. RediLine® Compatible: Yes, but needed a spin of the deburring brush to start.

#### Cutter Information:

Angle: Single Angle

Diameter: 2.25 inch.

Material: Tungsten Steel

No. of Teeth: 90

Motor RPM: 1725

Machine Size: 15" D X 22"W X 11" H (Includes lever travel)

List Price: \$710.00

#### HPC 3333HQT Semi Automatic (Photograph 4.)

The HPC 3333 is built on the 1200 Code Machine chassis, however, the machine has been undergoing an evolution. It now sports HPC's newly introduced 4-way jaws (Photograph 5.) The jaws have been stretched apart compared to its double sided jaw predecessor to accommodate larger keys, especially in the automotive field. While we conducted our tests using the factory installed double angle cutter CW-42HQT, HPC provides a CW-55K3 Single Angle Kit, which provides a single sided copy dog/ stylus and cutter. With the double sided cutter, this machine was the fastest duplicator we tested. It also was the only machine we tested where the original key was placed in the right vise instead of the left vise. Could this make it a faster machine for right handed users? The carriage automatically locks when the carriage is positioned all of the way to the left. To release the carriage, push down on the carriage knob and move the carriage lever to the right until the key blank reaches cutting position. Using the double angled cutter, start either from the left or the right of the key blank.

The 3333 also provides for a tilting cutter head. The appropriate cutter and jaw enables this machine to duplicate Emhart and Medeco high security keys.

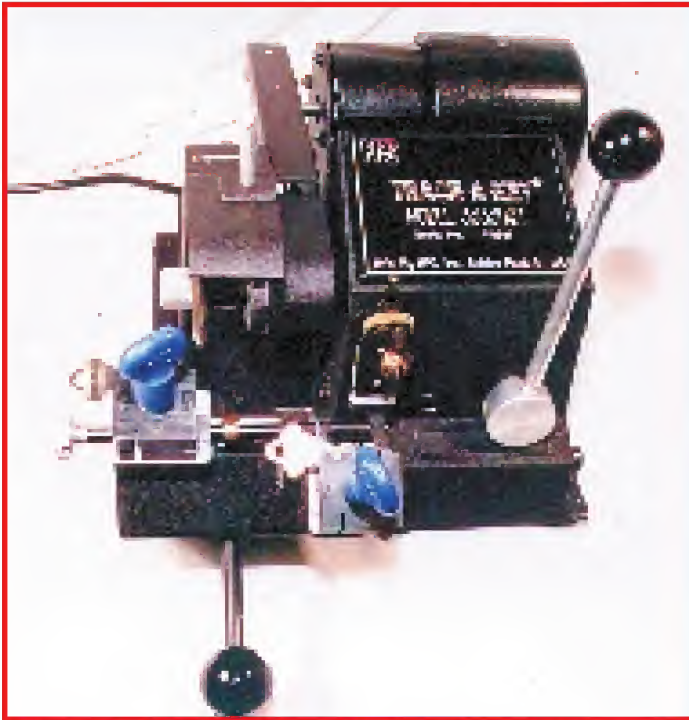
This machine used a movable and adjustable key gauge fork. Tip keys were gauged by the use of clips placed in the vises. Depth adjustments could be made with the use of a micro adjustment wheel over the copy dog/ stylus.

#### Statistics

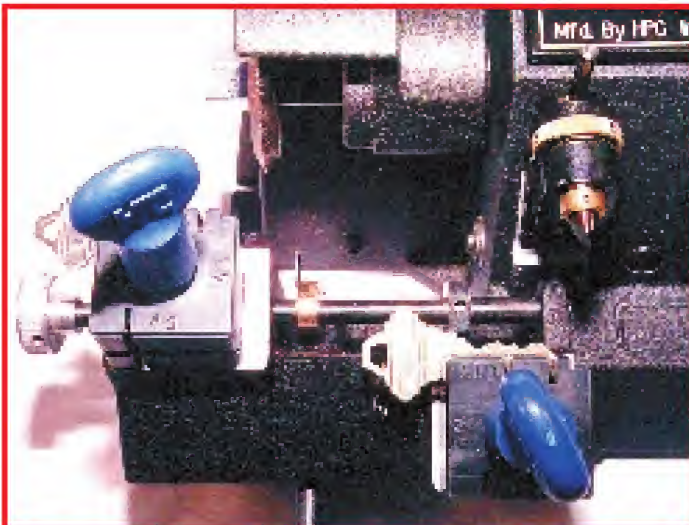
Duplication Speed: 1 min. 1 sec.

Key Generations: 20 (Photograph 6)





4. The HPC 3333HQT was the fastest duplicator tested.



5. The HPC 3333HQT features 4-way vice jaws.



6. The second best key generation score was turned in by the HPC 3333HQT with a total of 20.

**Major**  
MANUFACTURING, INC.

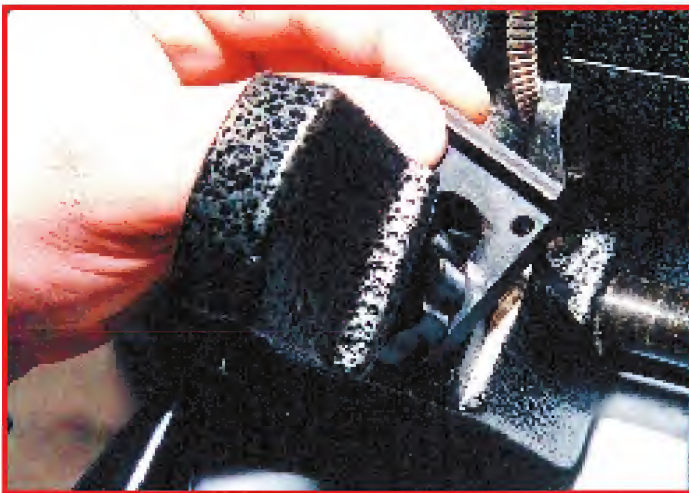
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Of the Person  
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**7. The Rytan 100 was the easiest to gauge keys and had easy vice jaw conversions.**



**8. The vice jaws easily converted on the Rytan 100 and no bearings or washers fell out when converting.**



**9. A total of 14 key generations were accomplished with the Rytan 100.**

Visual Duplication Appearance: Excellent, except on GM keys due to the double angled cutter. Should use CW-55K3 single angle cutter kit for optimum appearance on GM keys.  
Copy Dog/ Stylus Wear: Impression marks but no measurable blade wear.  
Vise Clearance: 2.2 inches.  
Carriage Travel: 1.575 inches.  
500 W. RediLine® Compatible: Yes.  
Cutter Information:  
Angle: Double side.  
Diameter: 2.375 inches.

Material: High Speed Tool Steel.

No of Teeth: 90.

**Motor RPM:** 1700

**Machine Size:** 13"D X 17.5"W X 11"H (includes lever/ carriage travel)

**List Price:** \$999.00

**Rytan 100 Semi-Automatic (Photograph 7.)**

This machine was a fun and easy machine to use. Our sample included the optional deburring brush and a key gauge protector which protects the stylus side gauge from crashing into the stylus, thus throwing the machine out of adjustment. Like many machines, the cutter side stylus is not immune from the cutter wheel. Also included was the optional cutter shield, this however, did not fit on our machine. Other accessories include a lamp kit and a slotter kit for flat steel key duplication. The jaws are double sided, but not like commonly seen. The jaw grips from the bottom. On a new machine, it may be necessary to loosen the jaws by moving them up and down a few times by the vise knob. A large top jaw clamp knob holds the upper jaw in position. Loosening the top jaw clamp releases the top jaw for changing from side A to side B, and no washers or bearings fall on the floor or under the counter (Photograph 8.) Depth adjustment can be made with the use of a knurled adjustment knob, similar to the one on the HPC 3333. Spacing adjustment is made by moving the cutter horizontally on the shaft. Finally, tip gauged keys and tip slot keys are gauged by a truly versatile gauge fork. Kudos for this design! Of the machines tested, this is the easiest to load. Lastly, although it won't happen too often, this machine has the easiest cutter wheel to change. There is a shaft brake on the front of the machine - but out of the way of normal operation, - which will lock the shaft while loosening the cutter wheel. Very easy to use.

The instruction manual is an education for the locksmith and is "locksmith friendly". It explains why the machine was made the way it is and offers solutions to some inherent problems. Our biggest concern is the wear of the original key on the stylus. Page 16 of the manual recommends duplicating no more than five or ten keys per original key.

**Statistics**

Duplication Speed: 1 in. 28 sec.

Key Generations: 14 (Photograph 9.)

Visual Duplication Appearance: Excellent. GM keys were good.

Copy Dog/ Stylus Wear: Loss of .006" due to heavy carriage spring.

Vise Clearance: 3.8 inches.

Carriage Travel: 1.9 inches.

500 W. RediLineR Compatible: Yes.

**Cutter Information:**

Angle: Single angle.

Diameter: 3.15 inches.

Material: CPM Type 2 M 3

No. of Teeth: 100

**Motor RPM:** 935

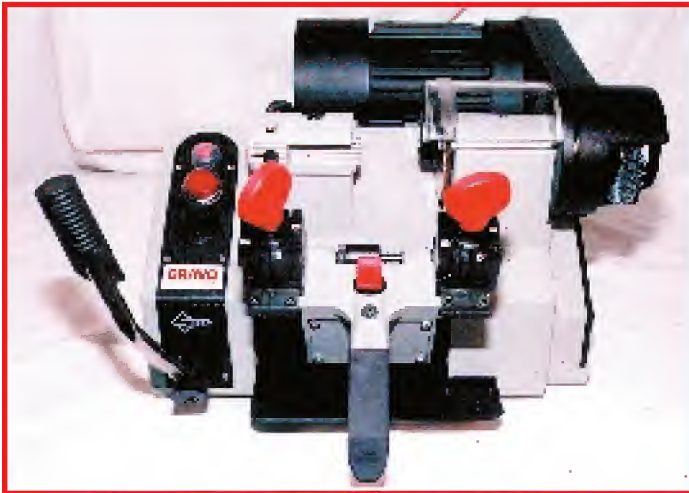
**Machine Size:** 14"D X 24"W X 9.5" H (including levers and brush)

**List Price:** \$1199.00

**Silca Bravo Semi-Automatic (Photograph 10.)**

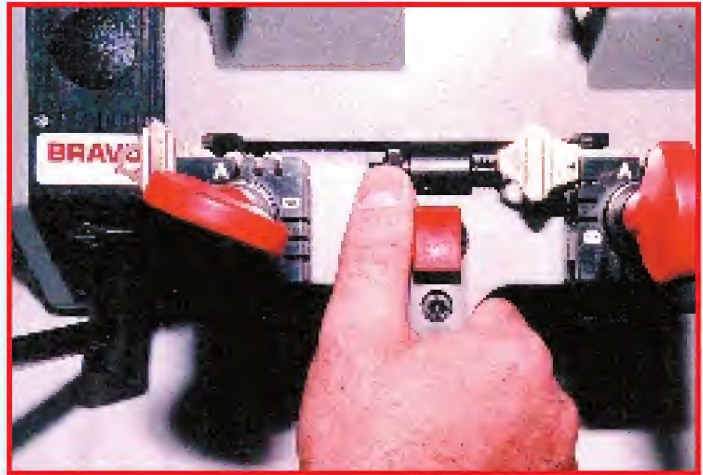
The carriage lever is the hardest of the tested machines to move horizontally, and the spring tension against the stylus and cutter wheel is the heaviest. That's the worst





**10. The Silca Bravo was the safest of all the machines to use while also producing the most key generations.**

thing I can say about this machine however. Great special features abound. The 4-way jaws grip the key without letting go. A lighted switch identifies when there is power to the machine. The machine automatically powers off the cutter wheel when the carriage is locked. The carriage automatically locks when tilted back. The gauge fork will not engage unless the carriage is locked. The power will not start the cutter wheel unless the carriage is unlocked. The carriage is adjusted so that it cannot cut into the jaws (Photograph 11.) This is the safest machine tested, not only for the operator, but for the machine itself! One nearly has to intentionally put their finger in the cutter wheel while



**11. The carriage of the Silca Bravo was the hardest to move but it also incorporated more safety features.**

pressing the deburring brush power button to injure themselves.

Of all the machines tested, this machine produced the highest number of key generations.

The machine includes a micro depth adjustment which is labeled in thousandths of an inch increments, making it easy to adjust the machine for worn keys. About the only optional accessories that are not included is a lamp and an upgraded cutter.

Included with the machine are replacement fuses. The safety features mentioned above utilize micro-switches and

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**12. The winner in the key generation tests was the Silca Bravo with a total of 21.**

an electronic board. These micro boards are all enclosed in a tight well built housing which surround most of the moving parts as well.

#### Statistics

Duplication Speed: 1 min. 30 sec.  
Key Generations: 21 (Photograph 12.)  
Visual Duplication Appearance: Excellent. GM keys were good.  
Copy Dog/ Stylus Wear: Loss .0015" due to heavy carriage spring.  
Vise Clearance: 3.25 inches.  
Carriage Travel: 1.85 inches.  
500 W. RediLine® Compatible: Yes.

#### Cutter Information:

Angle: Single angle  
Diameter: 3.15 inches.  
Material: High Speed Steel  
No. of Teeth: 110  
Motor RPM: 900  
Machine Size: 18"D X 21"W X10" H (including lever)  
List Price: \$1385.00

#### And the Winner Is...

They're all winners! Each machine has its own characteristics, features, advantages and price range. One is sure to fit you needs.

The **ESP 3000**, is the easiest to use with depth keys and produced the best looking duplicate for General Motors keys.

The **HPC 3333**, is the fastest duplicator with the smallest footprint and ranked second in the most key generation category.

The **Rytan 100**, is the easiest to gauge keys, had easy vice jaw conversions and included the friendliest user manual.

The **Silca Bravo**, is the safest to use and will produce the most key generations.

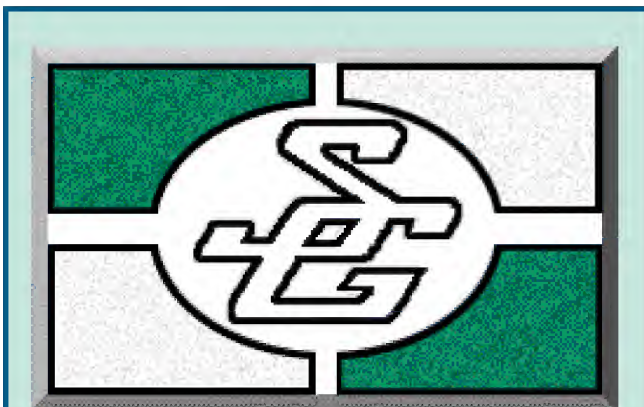
For more information on these manufacturers contact:

**ESP** - 1-800-537-6121

**HPC** - 847-671-6280

**Rytan** - 1-800-447-9826

**Silca** - 216-487-5454



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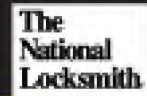
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# GUN SAFES & LOCKERS

With more and more states passing "Concealed Weapons" laws - Texas being the latest - the demand for firearm protection is increasing. The following is a sampling of some of the products available to fill the need.

**Gardall Safe Corp.**, is pleased to announce the introduction of our new BDF series of Gun Safes. This series is the highest rated 1200 degree Fahrenheit gun safe available today. We incorporate over fifty years of commercial safe manufacturing to design the BDF series. These products use three layers of 5/8" material to protect the body of the safe. In addition we have lined the door with two layers for added protection. This series comes in either 12 or 26 Gun configurations. In addition they now weigh 725 lbs., making it the heaviest gun safe in it's class.

The **DECOY Safe Co.**, manufactures an all-steel safe covered with selected solid hardwoods so that it matches the furniture in the customer's home. Each safe features multiple independent Medeco locks, fireliner, light, dehumidifier and made-to-order interior. Featured woods are Black Walnut, Cherry, Mahogany, Teak and Oak. Available in 10 GA or 1/4" safe body.

The STEALTH is DSC's newest introduction. Presently available in the popular 60 x 30 x 25 size, the STEALTH features a 7 gauge body, 1/4" door, 14 active bolts, standard fireliner, a fully covered velvet interior

convertible from 15, 20 to 30 long guns and a weight of 820 lbs.

**Cobalt Manufacturing, Inc.**, offers fire resistant gun safes with standard features that include: Laser cut 1/4" door and front face with a 10 gauge body. Triple-wall fire insulating material (1-1/8") with deluxe, fully carpeted interiors have easy access gun racks. Sixteen, or more, chromed locking bolts operated by a true anti-drive mechanism plus a massive hard plate and two relockers, are why Cobalt has been U.L. listed for tool attack since 1992. Polished brass plated handle and top read key locking dial accent the base clear coat



**Gardall Safe Corp.**

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**DECOY Safe Co.**

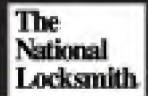
Circle Number 317 on Rapid Reply Card



**Cobalt Manufacturing, Inc.**

Circle Number 318 on Rapid Reply Card





automotive quality paint. A lifetime warranty and replacement guarantee round out the Cobalt standard features. Sold only through dealers and distributors.

**Advantage Security Products**, has taken note that the Concealed Weapons Law is a reality! Now that 27 states have implemented this law, men & women are applying for licenses and more and more guns are hitting the streets...legally, thankfully. Advantage Security Products is proud to introduce the Advantage Gun Locker. Manufactured in Texas, this quarter inch steel body is molded square tubing, seamless for the utmost security. The door is half inch steel with an internal hinge and your choice of key pad, single or dual key lock, or combination lock. The Advantage Gun Locker is lined to protect the contents. Protect yourself, your family, and that valuable weapon from theft and misuse.

The **Winchester Safe**, tradition is setting new standards for excellence by being the only gun safe that stands up to Underwriters Laboratories testing for both burglary and fire resistance. "When we designed the Tradition, we wanted something no other gun safe could claim — UL labels for both fire and burglary," says Dennis Lindsey, spokesman for the Melink Safe Co.,



### Advantage Security Products

Circle Number 320 on Rapid Reply Card

the licensee for Winchester™ Safes. "Not only did we accomplish our goal, but we are the only gun safe manufacturer to reach this achievement with a true, premium gun safe."

The Winchester W Tradition—which is Winchester's top-of-the line gun safe—carries both the UL Class 350 One-Hour Fire Rating and UL Gun Safe Burglary Label. UL is considered the benchmark for unbiased product testing because it is an independent laboratory that tests solely in the interest of public safety.

**National Security Safe Co.**, offers two types of fireliner available to our customers, both feature a heat activated door seal

which expands to seal the door tightly blocking out heat and smoke. First, every model, regardless of size or price, comes with a triple wall fireliner. Our triple wall fireliner has been tested and certified to provide superior protection over other manufacturers top-of-the line products. At the conclusion of the testing period, our triple wall fireliner maintained an average inside temperature of 266 degrees, over 80 degrees below the test fail point! Even more impressive is our optional Inferno Series fireliner, which produced an average internal temperature of 153 degrees!

As the manufacturer, we recognize the importance of making an educated decision. While other manufacturers make claims of being the best, they do not provide the documentation to back it up. National Security does not expect you to merely take our word for it, so we provide a copy of our documentation in every brochure along with a graph of our test results, so everybody can see.

This year, National Security has set the standard as the benchmark for security and fire protection, offering a triple-wall fireliner in every safe we build or our optional Inferno Series which provides our best protection available.



### Winchester Safe

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### National Security Safe Co.

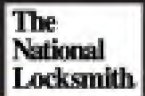
Circle Number 323 on Rapid Reply Card



### Fort Knox Security Products

Circle Number 324 on Rapid Reply Card





### GunVault

Circle Number 327 on Rapid Reply Card

**Fort Knox Security Products**, has enhanced its safe line with several new models and features. Starting with the Yeager Series, we have increased the thickness of the Reinforced Steel Liner to a 10 gauge steel. This make the inside steel liner as thick as most safes outer body. Accompanied with the 3/16 outer wall, it gives the steel thickness of the Yeager walls over 5/16 of an inch. The total wall thickness with Fire Protection is in excess of 1-5/16 inches. This Reinforced Steel Liner is also available as an option on the rest of the Fort Knox line. Our famous Guardian Series has always been the best dollar value in security. In 1996 we have added up to 9 additional locking bolts to bring the total up to 20 bolts. Also available for 1996 is the Deluxe Package. This option gives the Guardian



Also available for 1996 is the Deluxe Package. This option gives the Guardian



### Mul-T-Lock USA, Inc.

Circle Number 329 on Rapid Reply Card



### Cannon Safe Co.

Circle Number 328 on Rapid Reply Card

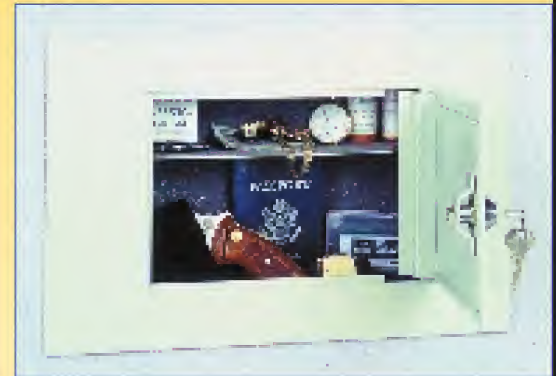
a 3/16 inch body and a 3/8 inch door. Our Defender is a new series altogether, offering affordability without compromising security. We have taken the popular Protector Series and eliminated some of the frills such as a high gloss paint and the brass plated handle & dial. This gives you a UL Listed safe with all the security features that have made Fort Knox "America's Best" together with a handsome appearance.

**GunVault**, gunsafes feature a patented keyless lock operated by touch, even in darkness. The user may select from 26,000 access codes. Fingers are guided to the touchpad by raised Braille like dots. The code is entered and the door springs open. Should the user forget his code, a keylock is provided. The MiniVault measures 12" x 8" x 5" and tapers to 3.5". The MultiVault measures 14" x



### Palmer Security Products

Circle Number 330 on Rapid Reply Card



### Buddy Products

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10" x 8" and tapers to 6.25". GunVault safes feature 16 gauge steel and can even be mounted upside-down. The safes are lined with foam. GunVault gunsafes use eight AA batteries.

**Cannon Safe Co.**, offers a range of fire resistant gun safes which have undergone many changes for 96' which are sure to be a hit. Just some of the new features are:

- \* U.L listed
- \* Full length hidden hinge ( no cavities on fire proofing)
- \* Spring loaded detent boltwork
- \* Certified fire protection
- \* High gloss finishes
- \* Super door
- \* Easy out interiors

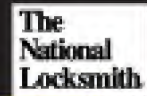
Also available from cannon are custom safes, vault doors, and powder mag safes.



### Liberty Safes

Circle Number 326 on Rapid Reply Card





### Buddy Products,

manufactures a wall vault (#3103-6) which is a heavy duty steel plate construction throughout, making the Wall Vault by Buddy Products a must-have for all valuables! Featuring 14 gauge steel in the storage compartment and 11 gauge door and face, this wall vault is virtually burglarproof! Foam lined interior and shelf protects jewelry and valuables from nicks and scratches. A Medeco cam lock secures the door. The unit has a 9-7/8" x 6-1/2" opening, 14 3/8"W x 3-3/4"D x 8 1/2"H compartment. Made in USA of recycled steel.

The **Mul-T-Lock USA, Inc.**, "Gun Safe," is a key operated mini safe which can hold a few handguns, but certainly not a rifle. However, being the manufacturer of high-security locks and doors, we can offer a gun collector a real "walk-in safe." Simply by installing a Mul-T-Lock steel security door with a four-way deadbolt on the entrance of a linen closet, you get a big and excellent safe room for storage of guns and/ or other valuable



### Perma-Vault Safe Corp.

Circle Number 325 on Rapid Reply Card

possessions. To increase the level of protection, and profit of the locksmith we suggest the locksmith laminate the closet wall with a steel sheet.

### Palmer Security Products

features a model 5000 compact gun safe which accommodates two average size handguns and features a Simplex lock. The pull out drawer provides quick access to your handgun. A mounting frame is also available facilitating quick, easy lock down or removal of the safe. Our line of safes are perfect for concealed carry permit holders looking for a way to secure their

handguns in a vehicle. (Weight 18 lbs., Dim 12" X 8-3/4" X 3-3/8".)

### Liberty Safes

are now UL Listed for security and Omega certified for fire protection. Safes sell fast due to beautiful aesthetics, internal hinge, and wide selection of models, colors, options and accessories. Save on Freight with 13 shipping locations. Best of all, dealers like the high profit margins, quick delivery and factory support.

### Perma-Vault Safe Corp.,

is introducing a new hand gun safe, The "Pistol Locker." This unit features a heavy steel construction with a rugged, oven baked stippled black finish. Pre drilled holes on the bottom permits bolting in a closet, under a bed, etc. The Pistol Locker is cushioned with two foam inserts, top and bottom. A convenient carry handle is placed on the top. The unit is equipped with a tubular security cam lock and two keys. It was introduced into the market-place to aid in the prevention of hand gun accidents.

TNL



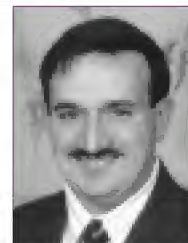
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# THE VON DUPRIN CX99 (Chexit Device)

**While other products offer an alarm that sounds when the door is open, the Chexit incorporates a delayed egress as well.**



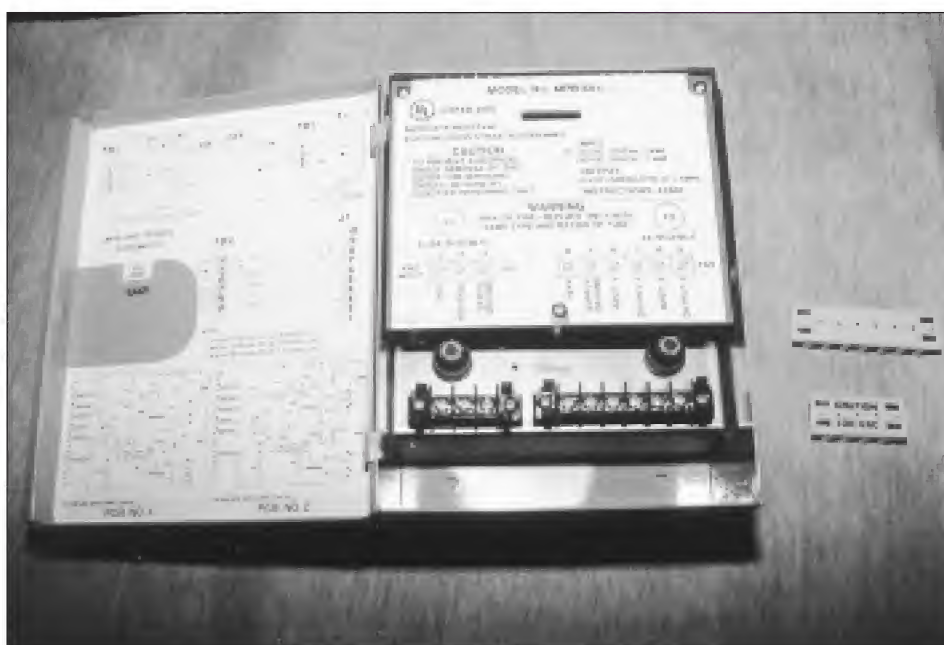
by  
**STEVE GEBBIA**

**T**he Von Duprin Chexit, is a heavy-duty delayed exit device suitable for high traffic areas. When armed, depressing the touchbar sounds an audible alarm and starts a 15 second countdown during which the device touchbar is locked. After the 15 second delay is over, the device will release allowing the door to open. Other products offer an alarm that sounds when the door is open, but in a setting such as a large department store, this rarely gives store security personnel time to respond before the culprit is through the door. Since the Chexit prevents the thief from exiting for 15 seconds, there is a much greater chance that he will be caught.

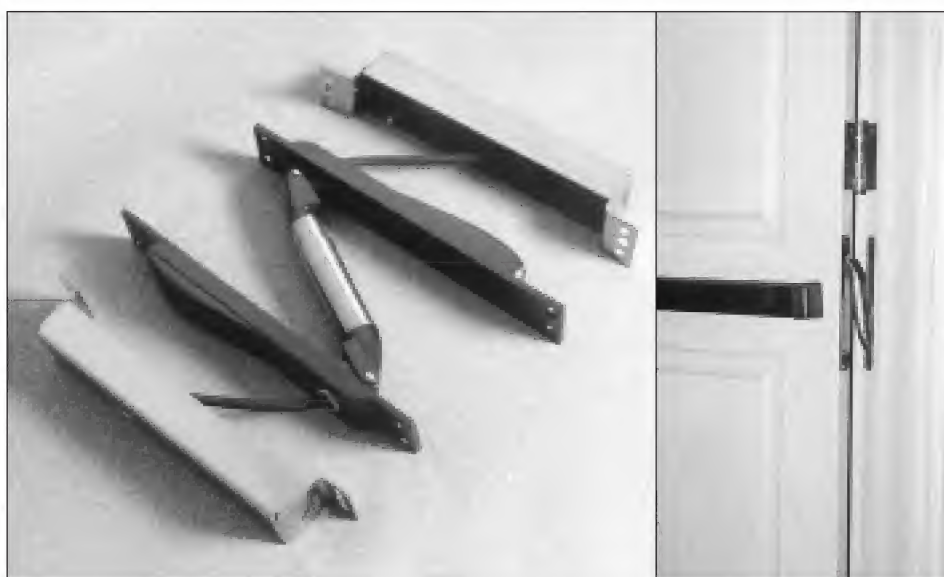
The Chexit is composed of a 98/99 series touchbar device with a solenoid, microswitch, electronic control module and alarm sounder. The solenoid physically prevents the latchbolt from retracting until the preset time-delay has expired. The electronic control module contains the main arming switch along with the various components required to control all functions of the device.

## REQUIRED COMPONENTS

**T**here are two external components that are required to complete the installation of this device. The first, and most important, is a power supply unit. You must use Von Duprin's power supply. Use of any other power supply will void the warranty. For a single door application, use the MPB 840 (See photograph 1.) The MPB 842 will power two units. (Note: Von Duprin is in the process of introducing updated power boosters to replace these units; the MPB 840 is being replaced by the MPB 671, and the MPB 842 is being replaced by the MPB 672.)



**1. The Model MPB 840 power supply.**



**2. The EPT-1024 power transfer hinge.**

The second requirement is a means of bringing power into the door. The product recommended by Von Duprin is the EPT-1024 (See

photograph 2.) An external power transfer cord, or a power transfer hinge may be used in place of this. However, there is good reason to use

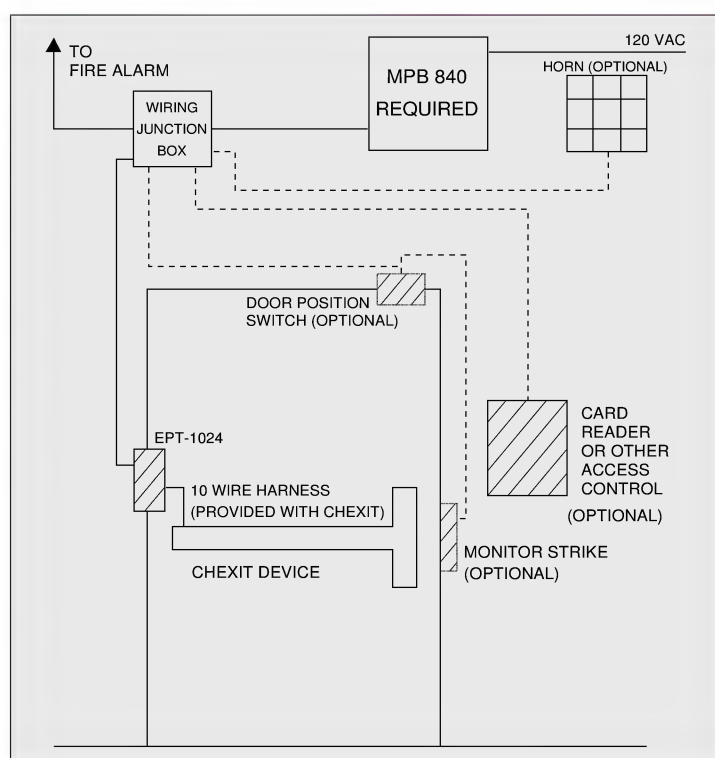
the EPT-1024. It is simply the most reliable, easiest way to provide the power transfer required for this device. It is also extremely durable and highly resistant to vandalism. When properly installed, it will last for many years on even the highest traffic doors.

#### OPTIONAL EQUIPMENT

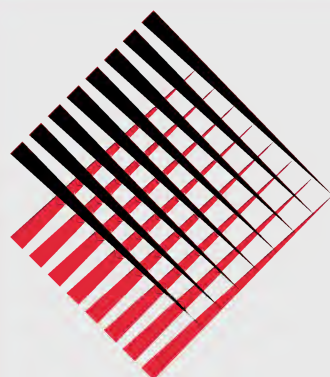
The Chexit can easily be connected to several optional external components (See figure 1.) This allows you to customize your installation to fit a wide variety of needs. These include an external horn, a card reader or other access control device, a door position switch, a latchbolt monitor switch, and an external key switch (to allow remote arming / disarming of the device).

The most basic application consists of the Chexit device, power supply,

power transfer, and connection to the building fire alarm system. Life-Safety codes require that, in event of fire, all exit doors allow free and immediate egress. The logic circuit in the Chexit device will allow this to occur. When a signal is received from the fire alarm system, the Chexit bypasses normal operation and operates as a traditional exit device.



**Figure 1. Optional external components that can be connected to the Chexit.**



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## PUTTING IT ALL TOGETHER

The first step in installing the Chexit is to prepare the door for the device. The procedure for this is the same as for a standard, non-electronic 98 or 99 series exit device. The only variation is the addition of a hole for routing the wire harness into the device. This hole is located in the hinge side end cap mounting bracket (See photograph 3). Drill all holes for mounting the device, but do not install the device to the door yet.

Now you can locate and install the power transfer. This is best done after the door has been drilled. If the power transfer is located too high or too low on the door - in relation to the wiring access hole - you will not have enough slack in your wires to make your connections easily. By installing the transfer unit after the door has been prepared you can choose a mounting location (for the power transfer) that will allow you enough slack in your wires to make the connections.

Now that the power transfer has been installed, go ahead and install the exit device to the door. Make sure to thread the wiring harness through the hole in the end cap bracket. Check the device for proper mechanical operation. Since the Chexit is fail-safe, it will operate as a standard exit device when no power is present.

## WIRING REQUIREMENTS

If you have not already done so, now is a good time to pull the wires for your external components. The following wire sizes are recommended. As with any electrical installation, longer wire runs require larger wire sizes. Remember, you may not be using all of these components, so you may not need all of the wires listed.

From 120 VAC source to MPB 840: (positive, negative, and ground.)	(3) 14 gauge wires
From MPB 840 to EPT 1024:	(2) 14 gauge wires.
From EPT 1024 to Fire Alarm System:	(2) 18-22 gauge wires
From EPT 1024 to Door Position Switch:	(2) 18-22 gauge wires
From EPT 1024 to Monitor Strike:	(2) 18-22 gauge wires
From EPT 1024 to Card Reader:	(2) 18-22 gauge wires
From EPT 1024 to External Horn:	(2) 18-22 gauge wires
From EPT 1024 to 2nd Chexit Device (when using gang-release option)	(2) 18-22 gauge wires



3. Wire harness attached to the Chexit device.

## TERMINATION

Von Duprin includes two instruction booklets with the Chexit. The first is for installing the device to the door. The second is for all the wiring requirements, layout, and termination's. This electrical instruction booklet is laid out extremely well. It walks you through the electrical termination's in an easy to follow, step by step process (See figure 2). Each step handles one set of connections. This allows you to concentrate on that particular connection without being snowed under with information about the other options. Although these termination's can get complex, these instructions make it as easy to follow as wiring an electric strike, it just takes a little longer!

When installing any electrical or electro-mechanical hardware, it is recommended that the connection to AC input voltage be the final one

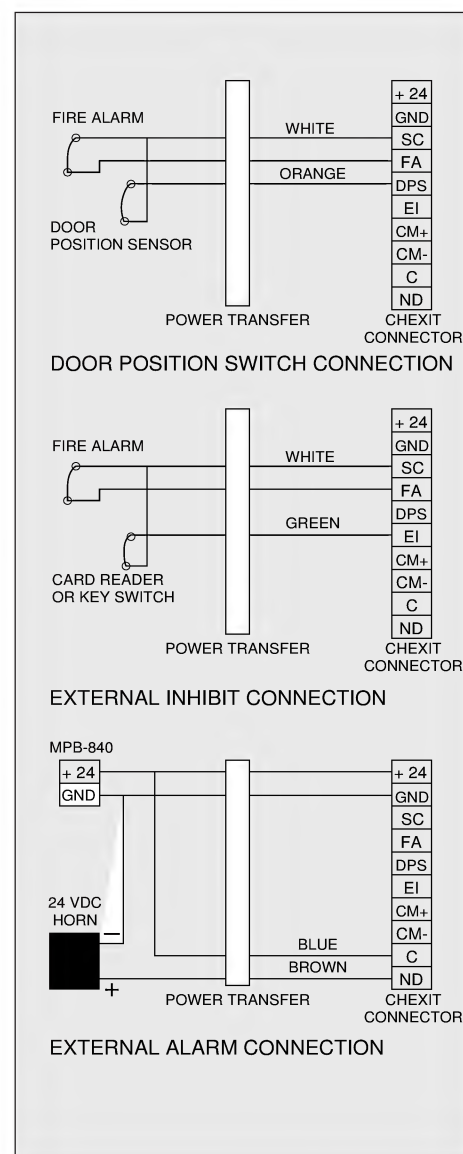


Figure 2. A sample from the electrical instruction booklet.

## Continued from page 72

made. Make all your low voltage connections (and double check them) before making your connection to AC. This final connection should be made between the MPB 840 and an always-live AC circuit.

Be sure to check your local building and electrical codes, in many areas a licensed electrician must make the final termination to AC power. Additionally, many municipalities have their own special requirements for electrical work. The city of Chicago, for example, requires that all electrical wiring - regardless of voltage - be contained within conduit.

## Power

Within the MPB 840 power supply, there are two terminal blocks - TB 1 and TB 2. The terminals on TB 1, are numbered 1, 2, and 3. The terminals on TB 2, are numbered 4 through 9. For this device, you will be using terminals 1, 2, 3, 4, and 5 only.

Terminals 1, 2, and 3 (TB 1) are for the AC input voltage connections (hot, neutral, and ground). Terminals 4 and 5, provide power from the MPB 840 to the Chexit device.

## Power Transfer

Connect the wires from the power transfer to the Chexit cable. If you are using an EPT 1024 as the transfer device, simply follow the color coding and attach each wire to its match. Connect red to red, black to black, etc. If you are using any other product to transfer power to the device, consult the wiring diagram in the instruction booklet to determine which wires will be utilized for your installation.

The following chart shows the function of each wire of the ten conductor harness:

The following is a list of the connections from the EPT 1024 to the various options:

At this point, you are ready to start the final assembly.

## THE COVER PLATE ASSEMBLY

**P**hotograph 4, shows the cover plate, bezel, control module, and a 1-1/4" mortise cylinder (cylinder not included.) To assemble, first slide the cover plate onto the control module making sure to orient it properly (See photograph 5.) Now install the

Wire	Function	Notes
Red	+24 VDC Power to device	MPB 840 or MPB 842 required
Black	Power Supply Ground	
White	Signal Common	24VDC to provide power for options
Yellow	Fire Alarm Input	0 VDC =Fire 24VDC =No Fire
Orange	Door Position Switch	0 VDC =Door Open 24VDC =Door Closed
Green	External Inhibit Input	0 VDC =Chexit Inhibited 24VDC =Chexit Active
Gray	Communication line	Used for gang release option
Violet	Communication line	Used for gang release option
Blue	Common for external alarm relay contact	Relay contacts can handle 1 amp DC @ 24 volts
Brown	Normally Open contact for external alarm	Contact closes when there is an alarm

These wires at EPT 1024:	Connect to this device:	Notes:
Red & Black	MPB 840, terminals 4 & 5	
White & Yellow	Fire Alarm	Contact must be closed when there is No Fire signal
White & Orange	Door Position Switch.	If not used, connect the Orange wire to the White wire.
White & Green	External Inhibit - allows a card reader or other device to bypass normal operation of Chexit and allow immediate, non-alarmed egress (or ingress.)	If not used, connect the Green wire to the White wire.
Blue & Brown	External Horn or Alarm.	If horn or other device requires power (most devices will), you may tap power from the Red and Black wires.
Gray & Violet	Gang Release option allows several Chexit's to release simultaneously if only one is put into alarm. Up to 32 devices can be ganged together in this manner.	Connect Gray & Violet wires to matching wires from next Chexit device.

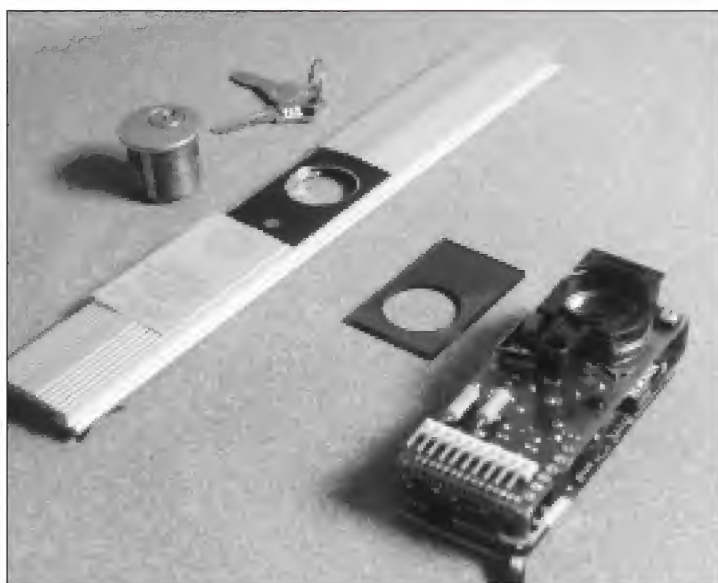
cylinder, making sure that the red bezel is between the cylinder and the cover plate and seats fully into the recess in the cover plate. The end of the module without the cylinder should be closest to the end of the device, and the bottom of the lock's keyway should be toward the solenoid (See photograph 6.) Test the cylinder to make sure that the cylinder can activate the module's switch without binding.

Remove the end cap and bracket from the device. Support the device so that it is not left with only the active case to support it. Slide the cover plate assembly into the device about two inches and then stop.

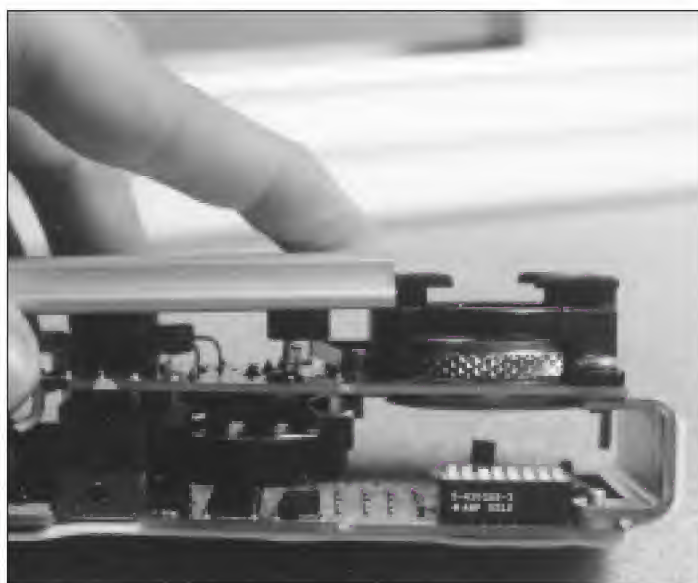
At this point, pass the orange two-conductor cable from the touchbar switch under the control module and plug it into its connector on the end of the module. Next, locate the three conductor cable attached to the



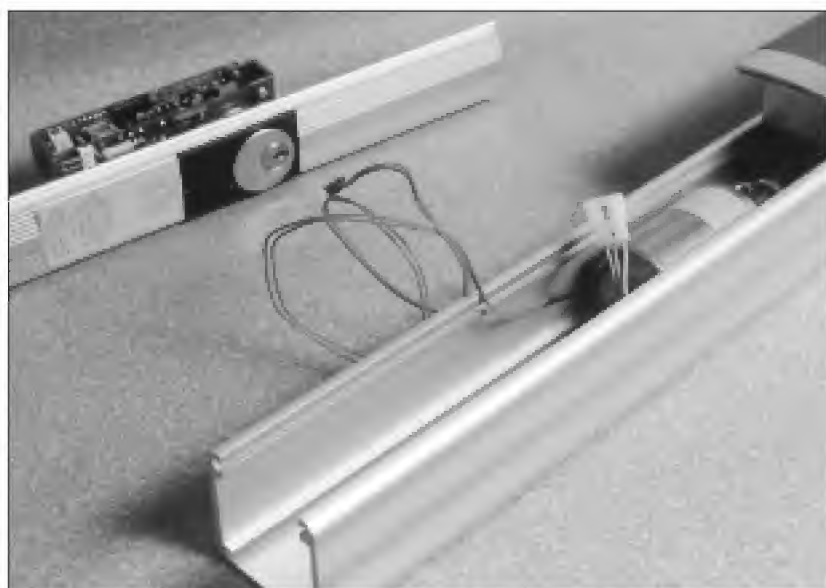
Continued from page 76



**4. The Chexit internal control module, cover plate bezel and mortise cylinder.**



**5. Cover plate being positioned on the control module.**



**6. The solenoid and wire connections.**



**7. Wire connections between the control module and solenoid.**

control module, pass it under the module, and plug it into the connector from the solenoid (See photograph 7.) Now, making sure that the power to the MPB 840 is off, connect the ten-conductor harness to the connector on the circuit board (See photograph 8.)

Carefully slide the cover plate all the way in, taking up the slack in the solenoid and switch wires as you go. If the cover plate doesn't slide in easily, stop and check for pinched wires and proper assembly of the cover plate.

Connect your AC input power and you are ready to test for proper operation.



**8. Ten-conductor harness attached to the control module circuit board.**

## TESTING AND TROUBLESHOOTING

The Chexit has a built-in test mode for checking the operation of the logic controller and the connection of external devices. It also has a suicide mode. If the logic controller detects a problem, it will blow the fuse in the MPB 840 to prevent damage to the electronics module. In this case, the device will operate as though it were a traditional exit device.

To test the Chexit, slide the control module partially out of the device, but leave all connections intact. On the lower circuit board are eight DIP switches. Push switch #7 to the ON position. (*these switches can be seen in photograph 5*). Turn the key to ON. This will start the following sequence:

1. The red light will go on for two seconds.
2. The internal horn will sound for two seconds.
3. The external horn or alarm will sound for two seconds.
4. The solenoid will pull in for two seconds.

At this point, the light and the horn should both be OFF. If so, the device is functioning properly. You are now finished with the self-test. Turn switch #7 and turn the key back to OFF to exit test mode.

Slide the end cap bracket back into the device and secure it to the door. Install the end cap and you are finished.

## CONCLUSION

Considering the complexity of the device, the installation is not that challenging. The components have been logically designed to simplify both the physical installation and the electrical termination. The electrical instructions save you time and grief by giving you an overview of electrical requirements and termination, then walk you through the termination process one step at a time.

The next time you have call for a delayed-egress exit device, think of the Chexit from Von Duprin. You won't regret it. **TNL**



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# BUSINESS BRIEFS

## News from the Locksmithing Industry

### INDUSTRY INTERVIEW...

*This month's interview is with Dera DeRoche, owner and president of Alarm Monitoring Services, Inc.*

*How long have you been in the security field?*

Long enough to be able to say "remember when...?" It's been fifteen years. Alarm Monitoring Services began in 1980.

*Can you describe a little of the history on how you came into this field?*

In 1980, my husband, who was an alarm installer, approached me with the idea of starting a 24-hour alarm monitoring business. That same year we went into business together. Because we didn't have the capital to hire any employees, he and I covered the phones ourselves. I worked from 7 a.m. to 7 p.m. and he worked from 7 p.m. to 7 a.m. That continued for the first year and a half and eventually we began hiring other employees.

In 1983 we separated. By May of 1986, my husband and I came to terms on a professional and personal level and I decided I wanted to buy him out.

I couldn't take out a loan because the company didn't have any credit. My only option was to scrimp and save everything I could. Unbelievably, I came up with the exact amount of the down payment - not a penny more, not a penny less! Now that the company was truly mine, I was determined to make this business work. Since 1986, I've increased my client list from 2,600 to more than 15,000.

*What has been the most enjoyable aspect of working in this industry?*

I'm a people person. I enjoy meeting and talking with people, listening to their thoughts and helping them. As president of what I like to call a dealer-sensitive central station, I'm in a position to affect someone's life and see them succeed in their business.

*What has been the most challenging aspect of working in this industry?*

Getting dealers to use new technology has been a real challenge. We're all in some way hesitant or afraid of

change. But we've got to take those first steps if we are going to grow our businesses and step into the future. Alarm Monitoring Services doesn't compete with dealers and even offers free 24-hour technical advice so it's really not hard keeping up with the technology or new products at all.

*What changes have you seen taking place in your industry? Why?*

Probably the biggest change is in the growth of the industry. Alarm dealers are more professional and progressive today. They are no longer working out of their cars but have up-to-date offices, many complete with fax machines and computers. Licensing requirements and the abundance of training and training materials almost demand professionalism.

Another change is in the technological advances of the equipment. We've all seen this even around our houses in everyday items like TV's, microwaves and CD players. Alarm equipment may be more efficient today, but I think we've gotten ahead of ourselves.

*What directions do you think this industry is taking? Why?*

The one word that best describes the direction of this industry is integration. That's the future. Technology continues to advance toward that goal. It's not just alarm dealers, it's the whole electronics

industry. What will emerge may be called systems integration. Whatever it will eventually be called, systems integration will encompass home automation, alarm systems, access control, home theater, central vacuums and much more. The time of an installer just doing alarms will fade.

*How do you think these changes have affected the locksmith?*

Locksmiths are in the same position as alarm dealers. Both have to move forward in the direction of the current. Locksmiths have an added incentive to enter the alarm industry. Who is in a better position to talk to customers about their home and business security needs than the man they've called to change their locks? They already have a customer base and the opportunity for profits is



**Dera Deroche, Owner and  
President of Alarm Monitoring  
Services, Inc.**

enormous. By installing a system with monitoring, locksmiths could be receiving recurring monthly revenue. Since they are already providing some type of access control, the jump is not far fetched. Alarm Monitoring Services provides a free brochure on how a locksmith can get started in the alarm industry. We've made it as easy as possible.

*What changes do you see necessary if the locksmith is to be successful in the future?*

Just like everyone else, the locksmith needs to stop being afraid of taking the first step. I don't believe locksmiths or alarm dealers will exist in the future in the same way that we think of them today. Our industries

are fading into the past just like drive-in theaters and blacksmiths. There won't be specialists anymore. Progress has taken over and the situation has reversed itself. It used to be that the best advice was to pick and direct your talents in one direction. Not anymore.

*What do you feel the future holds for the locksmith and his role in security?*

Entering the alarm industry is not as difficult as it sounds. As I've mentioned before, the help is available and the opportunities abound. Of course, another option would be for the locksmith to join forces with an alarm dealer. Both bring years of knowledge and experience with them.

*How do you think the locksmith can best serve his customers?*

I can't emphasize this enough. A locksmith can best serve his customers by providing alarm systems and taking steps toward integrated services. His customers already know and trust him. Most customers would rather stay with someone they know rather than search out someone new. By providing integrated services, the locksmith would save his customers, time money and possibly headaches.

*Any additional comments?*

Systems integration is the future and Alarm Monitoring Services is the place for locksmiths to be. **TRM**

### **D**ealer Connection, Inc.

In a continuing effort to enhance service to it's customers now offers two additional payment options with Visa and Master Card. **Tom McHugh, V.P.** of sales, stated, "This service has been added in response to Dealer requests."

### **D**edicated Micros

A leading provider of advanced surveillance equipment and the developer of the first CCTV video multiplexer, today announced it has established **DM University**, a formal training program for dealers, distributors and installers both at its U.S. headquarters and at major universities in New York and Florida.

### **F**olger Adam Ownership

An agreement has been signed between the owners of Folger Adam Company and it's two subsidiaries, The William Bayley Company and Stewart Decatur Security Systems, Inc., and a subsidiary of Williams Holdings PLC, an English publicly held company, for Williams Holdings subsidiary to purchase the assets of all three companies.

Williams Holdings subsidiary will purchase the assets out of the bankruptcy process that Folger Adam Company filed. It is anticipated the transaction will be consummated by mid-March. The Williams operation of the deal is subject to certain conditions, including bankruptcy court approval.

Williams Holdings is a multi-billion dollar, multi-national corporation focused on owning manufacturing

companies that service the world-wide building products and fire protection markets. About 50% of the company's revenue is generated here in the United States. The acquisition of Folger Adam Company would fill a niche in the World Security Division of Williams with such companies as Yale Security and Corbin Russwin. The new company name will be Folger Adam Security Inc.

### **I**ntellikey Controls Access to High-Tech Bill Gates Computer Center

Bill Gates, chairman and chief executive officer of Microsoft Corp., officially opened to the public a new computer science building named in his honor at Stanford University. The building, a showcase of technology, was opened using Intellikey, the world's most intelligent access control system, made by the Intellikey Corp. of Melbourne. "Intellikey is proud to have been chosen as the computerized access control system for the Gates Building, not only because of the many contributions Mr. Gates has made, but because of what the building represents for the



advancement of future technologies," said Frank N. Tsamoutales, vice president of marketing for Intellikey.

### **S**TRATTEC Moves Closer To Locksmiths, Distributors

Fred Kosloske is STRATTEC's new manager of after-market sales and service. He will manage sales to the locksmithing industry and automaker service parts markets. He also will be responsible for all training sessions and trade shows.



**Fred Kosloske**

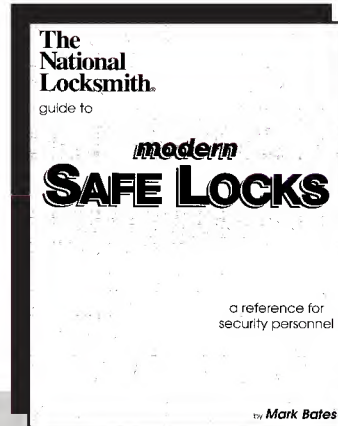


**Tom Seroogy**

New to the STRATTEC staff is Tom Seroogy, known to most everyone in the industry as the past managing editor of *The National Locksmith magazine*. Seroogy is also credited for co-authoring a popular GM service manual, "The National Locksmith Guide to Steering Column Service."

At STRATTEC, Seroogy becomes after-market service product manager. He'll work with Kosloske to meet the needs of locksmiths and distributors throughout the country. He brings the latest in automotive lock technology to locksmiths through the many trade shows and seminars he'll attend across the country. **TRM**





*This material was excerpted from the Mark Bates book titled Modern Safe Locks. The book covers combination operating and changing procedures for virtually every combination lock both mechanical and electronic, that you will encounter on a daily basis. Modern Safe Locks is available for purchase through **The National Locksmith**.*

# MODERN SAFE LOCKS TECH BULLETIN

## DIEBOLD

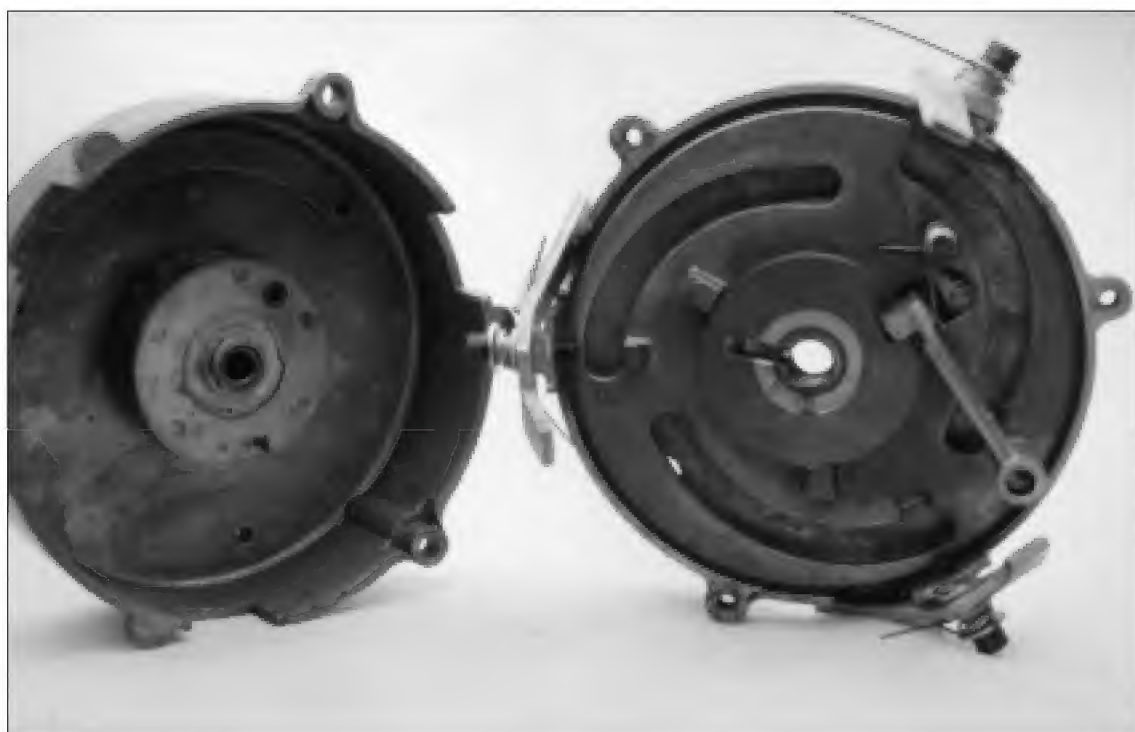
<b>MODEL:</b>	<b>177-75</b> (1977-1981)
<b>DESCRIPTION:</b>	Four wheel, key changeable combination safe lock. Regular change. The changing index is 5.2 numbers to the right of the opening index.
<b>RATINGS:</b>	UL Group 2
<b>FACTORY COMBINATION:</b>	5XL to 50, 1XR to stop.
<b>OPENING PROCEDURES:</b>	<p><b>WHEN SET TO A 4 NUMBER COMBINATION:</b></p> <ul style="list-style-type: none"> <li><b>a.</b> 5XR to 10</li> <li><b>b.</b> 4XL to 20</li> <li><b>c.</b> 3XR to 30</li> <li><b>d.</b> 2XL to 40</li> <li><b>e.</b> 1XR to stop</li> </ul>
<b>TO LOCK:</b>	Turn dial left 5 times.
<b>FORBIDDEN ZONE:</b>	90 to 10
<b>CHANGING PROCEDURE:</b>	<p><b>WITH THE SAFE DOOR OPEN...</b></p> <ul style="list-style-type: none"> <li><b>a.</b> Dial the existing combination to the changing index (steps <b>a</b> through <b>d</b> under "Opening Procedures").</li> <li><b>b.</b> Insert change key and turn it left 1/2 turn.</li> <li><b>c.</b> Dial new combination to the changing index (steps <b>a</b> through <b>d</b> under "Opening Procedures").</li> <li><b>d.</b> Turn change key right 1/2 turn and remove it.</li> <li><b>e.</b> Test combination at opening index (steps <b>a</b> through <b>e</b> under "Opening Procedures").</li> </ul>
<b>TOOLS NEEDED:</b>	Diebold #03-002223-0-00-0 change key.
<b>NOTES:</b>	Known as the rotary combination lock. This lock is very similar to the 180-55, but with an additional wheel and without the manipulation resistance. Very uncommon.



## DIEBOLD



DIEBOLD 177-75





# Reed Report

**E**ver wonder who the largest lock companies are in the U.S.? It's very interesting, but not surprising. In the top five are: Kwikset, Master Lock, Schlage Lock Co., Yale, and the number one spot goes to Securitas, (ASSA) with over "One Billion" dollars in annual sales. The sad news is that the locksmith industry is still a very small percentage of their overall income. However, without the other markets they serve we would probably have to pay \$600.00 for a door lock.

**T**he National Locksmith magazine has joined Security Resources as a seminar co-sponsor. I understand they have wanted to get into education in a bigger way, so we will all benefit from this. Marc, Steve and I will be meeting on future plans and programs. No doubt the beneficiary from this will be you, the locksmith.

**I**would like to ask all of the association newsletter editors to send me a copy of their issues. This is the best way for me to keep up with each. Just mail them to me at Security Resources, Inc., PO Box 15532, Pensacola, FL 32514. If you have any questions call me at (904) 476-2799.

**T**alked to Bill Silver of Silver Sales in Dallas. I'm happy to report that he will continue on the seminar trail with us. Of course, his wife Judee will be joining him. She does all the work anyway, and is a lot better looking.

**W**e recently had a great show in Ft. Lauderdale for a new association - The East Coast Locksmiths Association. It's always a pleasure to help the new associations get started, and from all indications this will be a good one, too. We had over 200 in attendance, and most stayed till the end. If you're in the southern Florida area and haven't found an association home yet, try East Coast Locksmith Association. Call Steve LaRosa for more information. (954) 929-5250



Yours For Better Security,

*Bill Reed*  
Bill Reed

## Scatter Shooting while wondering whatever happened to ... Mike Miller

**M**y phone is starting to ring again for technical information. I don't always have the answer, but can get it, or tell you who to call. Here are some of the latest questions I've had.

Q. There's a new lock out from England called the Clartin. Can you give me some information on it?

A. I only know of one "Clartin", and its a fiber optic inspection light. A good one, too. It's not from England, but Australia.

Q. I have a very old padlock with the #364 stamped on it. What do I have?

A. You already said what you have... a very old padlock. Its probably a Yale lock made in the early 30's. The shackle is automatically locked when put into the closed position.

Q. I have a GMC Truck with a code N436. Don't seem to have any information. Can you help?

A. Yes. This is the same series as the "D" & "E" series used on American motors. Everything's the same except the prefix change. I have started my code clinic again because of the many requests from associations so watch for me when the Reed/ Young seminars are in your area. **TNL**

**If you'd like to attend a Bill Reed seminar, co-sponsored by The National Locksmith, choose from the following. For more info, contact Bill directly at (904) 476-2799.**

May 4	Norfolk, VA	Aug. 18	Okla. City, OK
May 11	Dallas, TX	Aug. 31	Salt Lake City, UT
June 1	Colo. Sprs., CO	Sept. 5	Philadelphia, PA
June 8	Baltimore, MD	Sept. 15	Syracuse, NY
June 22	Detroit, MI	Oct. 30,31	San Diego, CA
July 6,7	Moses Lake, WA	Nov. 1,2	San Diego, CA

# The **WINTER** Side

"Cool-Hand Luke"



by  
**Sara  
Probasco**

**"L**ooks like another cold day ahead," Don said, peering at our outdoor thermometer mounted on the den window. Shivering, he pitched another log on the fire and reached for his mug of steaming coffee.

A late January Arctic cold front had come blustering through the area the day before, plummeting temperatures well below freezing, an unusual occurrence in our part of the country. "You'd better dress warmly for the store, today," Don advised me.

"I'll be all right as soon as I get inside," I said.

"No you won't. We don't have any heat, down there."

"You're kidding."

"Nope. The heater quit on us yesterday afternoon. The unit probably had frozen up. I'm sure it'll be that way until our landlord can get somebody down there to fix it."

Sure enough, when I arrived at the store the temperature seemed almost as low inside as out. The guys, still dressed in their jackets and caps, huddled around a small electric space heater in the back. They were talking softly, as if hoarding the warmth of their words.

I settled into my morning routine of office work. Right off, I learned it takes a special talent to type or input computer information in fleece-lined gloves. Even punching in telephone numbers can be a problem, but only if you care who it is you're calling. When I placed a pen into my fleece-lined gloved hand, I began to develop a whole new respect for Dr. Zhivago. Then the first service call came in.

"Okay," I called to the guys, "I need a volunteer to go out to the college and open a locked vehicle."

"How much colder can it be outside than in here?" Bob\* asked, slapping his body with his arms in an attempt to improve circulation.

"Better to be moving around out there than to be standing here shivering," Luke\* decided. "I'll take it."

"Where's Harry when we need him?" Bob asked. He's from up North, where it really gets cold. A day like this shouldn't bother him at all.

"Harry won't be in today. He's down with the flu," I replied. "I guess it's up to us Texans to muddle through, somehow."

"Figures."

**"W**ell, I'm out of here," Luke announced, taking the work order from my gloved hand.

"Be glad we're not up in the panhandle," Bob called after him, "I hear it was minus four up there, last night."

"That's nothing," Luke shouted back over his shoulder, "Minnesota had minus thirty-three."

His parting remark brought back memories. "I remember one winter night when Don and I were living in Amarillo," I murmured. "I had been to a class and was heading home around ten o'clock. As I came out of the building and walked toward my car, the north wind hit me straight on. It was one of those teeth-jarring blasts that cut right through you, down-filled parka and all."

"How far did you have to walk?" Bob asked.

"Not far. Thirty yards or so. The bad part was, once I reached the car I couldn't get my key into the door lock. It was completely frozen over. It took some nice guy with a cigarette lighter about twenty minutes to thaw it out for me."

"Sure!"

"No joke," I said. "According to the weatherman it was minus 65 degrees that night, with the chill factor."

Don poked his head around the corner. "Are you telling tales about winter in Amarillo again?"

"I tell you what, that night was the coldest I ever plan to be exposed to," I admitted.

"I don't guess I realized it got that cold in Amarillo," Bob said.

"The saying is, there's nothing between Amarillo and the North Pole except a barbed-wire fence, and it's down, about half the time," I replied.

Don laughed. "I'll bet you don't remember the first time I ever tried to get into a locked Volvo, but I sure do."



**"I really love mobile locksmithing...  
I really love mobile locksmithing..."**



Two hours I spent on that open parking lot in the middle of a South Plains blizzard," Don said. "Now, that was cold. Made me wonder if that guy was right who said the only people who would choose to be locksmiths didn't have both oars in the water."

"I've done a little cold-weather work, myself," Bob chimed in. You really know it's cold when you spray deicer into a frozen lock and nothing thaws."

"You think that's cold, have I ever told you about the time when...?"

That launched them into their own version of "Can You Top This".

Before they wound down, Luke was back from his service call with a satisfied grin on his face.

"From your expression, I gather everything went well," I said.

"Sure. No problem." Then Luke grinned again. "I whipped out the old opening tool and performed my magic. The guy was most appreciative." He rubbed his hands together in front of the heater and smiled again.

"So, what's with the Cheshire Cat act?" Bob asked. "Did he give you a tip or something?"

"Like I told you, he was impressed with how fast I got his car open."

After a little coaxing from Bob, Luke finally told us the rest of the story.

After completing the job, the customer turned to Luke and said, "That funny little metal rod is real cool, man."

"Yea, especially on a day like this," Luke had replied.

"No, I mean it" the customer reiterated, "somebody oughta make a small version of one of those things that I could carry in my pocket, in case I ever need to get myself into my car again."

"They do," Luke had replied as he presented the bill and pulled on his gloves. "It's called a key."

**\*Names have been  
changed to protect  
the innocent.**



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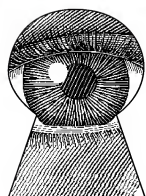


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# THRU THE KEYHOLE



## A Peek at Movers & Shakers in the Industry

**ATTENTION MANUFACTURERS AND DISTRIBUTORS:** Would you like your company and products to be profiled in *Thru The Keyhole*? Please call Managing Editor, Greg Mango at (708) 837-2044.

### Harloc's Repositioning A Boon To Locksmiths

The modern residential lockset industry was established in the immediate post-World War II era in the United States when many of today's major lockset companies were born and rose to prominence. However, within the last 10 years, the lockset industry has undergone significant change with the onset of the big box retailers. Companies which grew up with the locksmith and building industries have experienced mergers, acquisitions and a revolution in the distribution of products to the public. Large retailers have become their most important customers, often to the detriment of locksmiths and builders, the traditional backbone of the industry.

While this provides some justification for many hardware manufacturer's reliance on the Home Center business, Harloc, Inc., based in Taylorsville, Kentucky, recognizes the result is neglect and frustration for many customers and conflicts with the big retailers who often offer many of the same products at a significantly discounted price. Harloc, founded in 1948, has thus repositioned itself to give locksmiths an alternative.

As part of Harloc's new strategic path, the 1996 ALOA Show will mark the debut of Harloc's complete line of new and re-engineered products to the locksmith trade. The product line includes: residential and light commercial knobs, levers, handlesets and deadbolts.

"We have reassessed the needs of locksmiths and are committing our resources to providing the kind of

quality product and customer service that the locksmith industry needs but now rarely receives," states Harloc president Jeff Kates, who joined Harloc from Kwikset in 1994. "The public won't find our products at Home Depot, Lowe's or Builder's Square. What they will find however, are our quality products offered to them at a good price through professional locksmiths, builders and remodelers. We feel that this helps to remove some of the downward price pressure you find when selling other products, which are commonly available at a variety of retail stores."

Harloc's complete new and re-engineered product line includes:

**Terra Series:** All Terra Series products incorporate a new chassis design with concealed holding screws and solid brass cylinder assemblies.

**Cascade Series:** The Cascade Series incorporates larger roses, stronger torque springs, and Harloc's exclusive Uni-Latch system for simple installation in doors.

**Empire Series:** The Empire Series knobsets incorporate heavy duty cylinder construction, a steel

cylindrical construction, a steel cylindrical case, and adjustable outside rose for use on various door thickness.

**Fortitude Series:** The Fortitude Series levers are ideal for meeting American with Disabilities Act (ADA) requirements in industrial, commercial or residential applications.

**800 Series Deadbolts:** Harloc's 800 Series deadbolts are the perfect companion for the Terra Series knobs and levers, offering excellent strength and reliability in a standard duty deadbolt.

**900 Series Deadbolts:** Available in a variety of functions and finishes, the Harloc 900 Series deadbolts complement the Harloc Cascade Series knobs and levers.

**Summit Series Handlesets:** Elegant designs and quality construction in two handlesets that also feature a balanced torque spring for ease of operation and square spindle assemble to make installation simple on either right or left hand doors.

**Homestead Series Handlesets:** Harloc's Homestead Series handlesets provide reliable operation, easy installation, the best clear coat finish in the business and the unmistakable feel of solid brass new home buyers will appreciate.

All Harloc products offer key compatibility with both Kwikset and Schlage products and are backed by a commitment to customer satisfaction and a Limited Lifetime Warranty on both function and finish.

Harloc's parent, TESA based in Spain, is the world's fourth largest residential lockset manufacturer. TESA operates several manufacturing plants worldwide with facilities in Spain and Mexico, as well as the Harloc plant in Taylorsville, Kentucky, 800/ 542-7562 (phone), 502/ 477-8831 (fax). **TNL**



Jeff Kates, President of Harloc, Inc.



# TECHNITIPS

## Helpful hints from fellow locksmiths

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tips and win.**

### HOW TO ENTER

Simply send in your tip about how to do any aspect of locksmithing. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Write your tip down and send it to: **Jake Jakubowski**, *Technitips Editor, The National Locksmith*, 1533 Burgundy Parkway, Streamwood, IL 60107 or send your tips via E-mail to the E-mail address posted in the upper right hand corner of this page. So get busy and send in your tips today. You may win cash or merchandise. At the end of the year, we choose winners for many major prizes. Wouldn't you like to be a prizewinner in 1996? Enter today! It's easier than you think.

### BEST TIP OF THE MONTH

If your tip is chosen as the best tip of the month, not only do you win the All-Lock A-6200 Auto Service Kit, but you also automatically qualify to win one of the many excellent year end prizes!

### EVERY TIP PUBLISHED WINS

Yes, every tip published wins a prize. If your tip is printed, you'll win \$25 in Locksmith Bucks. You can use these bucks to purchase any books or merchandise from *The National Locksmith*. Plus, be ready for Jake's Grab Bag prizes! Remember, everyone wins. (Please remember to include your complete mailing address - we cannot mail prizes to P.O. Boxes.)



by  
**Jake Jakubowski**

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- All-Lock A-6200 Auto Service Kit
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- Sargent & Greenleaf 4400 series safe deposit lock
- Silca Keyblanks (100 Blanks)
- Pro-Lok PK15 Professional Lock Pick Set
- Tech-Train Training Video
- Sieveking Products EZ-Pull GM Wheel Puller
- Major Mfg. Products
- The Sieveking Auto Key Guide

### Shazaam!

Marc made an appeal through the 'Net' and E-Mail for Technitips, and the tips rolled in! It does make my job a great deal easier when you guys really get busy and send me your tricks and ideas. Of course, that kind of response isn't going to hurt the tipsters any either when they receive their prizes if I print the tip they sent in. Notice that I said prizes - as in more than one prize. The reason for my using the plural form is: For every tip that I print, that tipster gets several prizes!

However, quite a few E-mail tipsters forgot to send me a physical or delivery address. Unfortunately we do not have a way to deliver prizes over the net yet. Until the technology is implemented to allow for cyber delivery, even you E-Mail tipsters are going to need to include a delivery address that UPS or Snail Mail can deliver to.

If your E-Mailed tip doesn't include that all important address, I can't print the tip no matter how good it is. As a result, I've got a whole folder full of good, printable tips that I can't use. And, that's a real shame since it means that someone won't get the prize they deserve for sending me a good tip that I'd like to share with all the readers. So, folks, keep them cards,

letters and E-Mail tips coming, but remember to include your shipping address. O.K.? Now, here's a tip from me to you. The National Locksmith Magazine along with the help of generous sponsors that contribute prizes, is giving away more prizes every month than ever before in the history of the Technitip Column. When you figure in the fabulous year-end prizes that are given away each year, the monetary value of those prizes gets on up into some really serious bucks. In fact, I'd reckon that I'm giving away tens of thousands of dollars in stuff each year. Why shoot, I give away nearly \$4,000 a year in Locksmith Bucks alone!

When you then figure in the key machines, code books, drill motors, locksmith tools, service kits, merchandise certificates, training videos, keyblanks, cross-reference books, safe deposit locks and all the other good stuff (including my own grab bag prizes, which are also contributed by distributors, manufacturers and others.) the dollar value of those prizes kinda gets mind-boggling'.

So, what's my tip? Each and every one of you have a chance to latch onto some monthly prizes and qualify to be a potential year-end prize winner! All you have to do is

Continued from page 106

send me in an idea, tip or trick that I can use. I use it - you win! Is that simple, or is that simple?

Don't be concerned about whether the tip is "Good enough" or if it seems too "Easy" or that maybe you think someone else might already have thought of it and sent it in. Write it down, send it in and if I can use it, I will! So what're y'all waiting for? Like the saying' for Nike goes: "Just Do It!" Y'all heah me, now?

#### American Lock And Supply Winner: **Lexus Tricked**

My first adventure in Lexus Land, went like this:

The car was locked and the keys were in the trunk. After unlocking the car, the alarm went off and - as I found out - the electrical system shuts down leaving the trunk release button inoperable until the system is reset.

My first thought was to remove the battery cable and reattach it. That idea didn't work. After considering my options for a moment or two, I

wondered if by removing the wafers from the door lock and then turning the lock with a key blank, I could "trick" the system into believing that the door had been unlocked by a key and allow me to use the trunk release button to open the trunk.

However, when I removed the door panel, I realized that all I had to do was remove the electrical switch from the back of the door lock and then turn the actuator with a pair of needle nose pliers.

The on-board computer thought a key had been used which allowed me to depress the trunk release button and open the trunk for my customer.

I have since found that some trunk release buttons may be pushed in and "locked". You can still activate the trunk release mechanism by lowering the panel under the dash. The lock works like a push-button desk lock and all you need to do is locate the retainer allowing the lock to pop out to the unlocked position.

Rebecka Caster,  
E-Mail

*[Editor's Note: I have received several tips regarding keys locked in the trunk of a Lexus. Rebecka's was the first detailing her particular method. In future columns, I will print other examples of Lexus trunk lock by-pass techniques as long as they are not repetitive.]*

#### All Lock Winner: **Three Point Progression**

Progressing two unknown cuts to complete a key is usually a piece of cake for most locksmiths. However, many locksmiths find it difficult to progress three unknown cuts, as would be the case if you were to use the glove box lock to originate a first key for certain models of Mitsubishi, Hyundai and some others.

The easiest way to progress three unknown cuts is to have a prepared progression chart.

The following is a generic chart for a three space, four depth progression situation that might be encountered on many foreign and some domestic automobiles, light trucks and motorcycles.

The asterisk(\*) indicates cuts that you can avoid making if the MAC's is only a two or does not allow a one cut next to a four cut. You can eliminate even more combinations when your last known depth is a one or a four.

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### A Three Cut Progression Chart

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	Key
111	121	211	131	221	311	331	141*	411*	321	421	231	
112	122	212	132	222	312	332	241*	412*	322	422	232	
113	123	213	132*	223	313	431	341*	413*	323	423		
114*	133	214*	242	233	314*	432	441					
124	143*	224	342	333	324							
134	243	234	442	433	424							
144*	343	334										
244	443	434										
344												
444												

First mark the position of the drip-in above the dial ring with a felt tip pen or scribe. After using whatever method you would customarily use to access the wheel pack, do the following:

Cut out a small disk of heavy paper or cardboard (*See illustration 1.*) Cut a hole in the center and attach it to the spindle in such a manner that it will rotate with the spindle.

Use a pair of small Vise-Grip pliers or an emergency dial to turn the spindle.

*Continued on page 111*

At the most you will need twelve keys to obtain a working first key with this three cut progression chart. However, my experience has shown that mathematically only four keys will be necessary 50% of the time.

Mike Spencer,  
E-Mail

#### HPC Pistol Pick Winner: **Two Is Better Than One**

Here's a tried and true tip that I came up with several years ago for extracting broken keys from foreign car ignitions, doors and trucks.

Use two spiral key extractors. Screw them down the milling grooves of each side of the broken key. Once the extractors are in tight enough to grab the key but not so tight that you can't pull them out of the lock, twist the two extractors together (like a twist tie on a bread bag). You can only twist one time but that is usually more than enough.

Not only does this "twisted" idea cause the extractors to grip the key more firmly, it also moves any wafers out of the way that might impede the removal of the broken key piece. On a trunk or door lock, I use a diamond rake tool to hold the dust cover open. By inserting it in the bottom of the keyway and turning it so it lays flat, it does the job nicely.

Dominick Atanasio  
E-Mail

#### Sargent & Greenleaf Winner: **Paper Transfer**

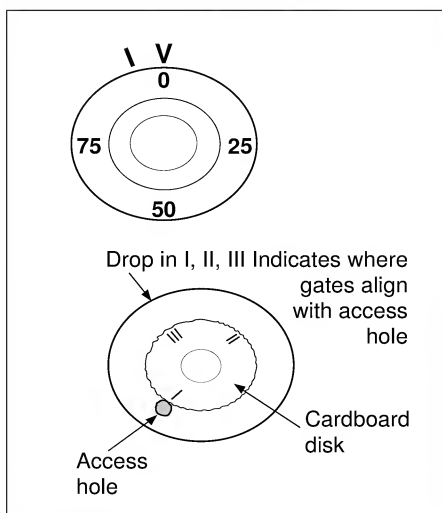
To avoid unnecessary internal damage, some safes are best drilled away from their drop-in point which makes it necessary - using normal procedures - to transfer numbers after drilling the safe. Here's a simple way to transfer gates (not numbers) to the drop-in point.

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Continued from page 109



**Illustration 1**

Using direct sighting, an otoscope, borescope or flashlight, align the first gate with the scope hole that you drilled in the safe (it doesn't matter what the number is). When you bring the first gate into alignment with the hole, make a Roman Numeral "I" on the disk.

Bring the next gate in alignment with the scope hole and make the Roman numeral "II" at that point on the disk. Repeat the process with the third (or fourth) gate and mark it "III" or "IV" as necessary.

With all the gates "marked" on the disk over the spindle, all you have to do is "dial" the gates to the drop-in using the same dialing procedures you would use if you were actually dialing a numerical combination, except in this case you are dialing gates directly to the drop-in.

After dialing to the drop-in (depending on the type safe you are working on) just retract the bolt or turn the handle and open the safe.

R. W. Staples, CML  
Washington

[Editor's Note: The foregoing tip just goes to prove that there is "always a way". For those of you that do not want to spend the time making your own transfer tool, Lockmasters recently started marketing a neat little set of transfer tools called the "Gallian Transfer Tool". The set consists of four very thin plastic disks with small set screws to hold them to the spindle. By aligning each set screw with the gate, the set screws become your "numbers". After "marking" all the gates, simply transfer each set screw - in sequence - to the drop-in point. The set was developed by my friend Tom Gallian and, as I said, is marketed by Lockmasters for

about \$15. In a future issue of *The National Locksmith*, I'll show you Gallian's Transfer Tool in action along with some truly amazing drill bits. Don't dare miss it - y'all heah?]

#### 100 Silca Keyblanks Winner: **All Plugged Up**

While at a nursing home rekeying some Yale 8 cylinders, I must have dozed off while rekeying the second cylinder because I inserted the plug in the shell backwards. I quickly woke up after I had turned the plug and allowed the top pins to spring into place!

The location of the pin chambers are such that the #2 chamber in the plug lined up with the #6 chamber in the housing, the #3 with the #5, and so on. The #1 chamber in the plug did not align with any of the chambers in the shell and the pin in that chamber would not lift but a few thousandths of an inch!

Since a working key could not be inserted into the keyway (because of the #1 chamber) I could not shim pick the plug to the shear line.

My solution was to duplicate the master key on another blank which I

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modified by cutting off the bow of that key and filed the #1 cut down low enough to pass the #1 chamber. Then, I inserted the modified key into the plug from the rear and pushed it in until it was positioned properly to create a shear line. I turned the plug with a small screwdriver and removed it in the customary manner.

After re-inserting the plug properly in the shell, I checked its operation and, since I do a lot of work for this facility, decided to put my "special" master key in a safe place just in case I decided to take another nap while doing a future rekey!

Raiford Ball, PhD, CRL  
E-Mail

*[Editor's Note: Raiford's tip will work. I know from experience since I've gone to sleep "at the switch" a couple of times myself. Just for the benefit of those who might not have a solid understanding of master keying principles, Raiford's tip works best when the master biting consists of all bottom pins or when the cylinder is not mastered. Otherwise, when making your emergency key, you would have to consider the pinning of each chamber and develop - by code - a key that would work in "reverse" for chambers 2-3-4-5-6. For example: If the second chamber was a number three depth and the third chamber was a number six depth (and so on) you could code cut a key to those depths and turn the plug if your key passed the #1 pin. It would take a little calculating but you could develop a "key" out with too much trouble. Or, you could pull a compatible cylinder out of your "spare parts box".]*

#### Major Manufacturing Winner **Saving The Shoulder**

Code cutting single sided GM keys on my Belsaw 200 presented problems for me since, depending on the depth, the first cut would often destroy the shoulder of the key.

I solved this problem by making a set of depth keys for that frustrating first cut. I made these keys by using factory cut keys as patterns (you only need five keys for the five depths) and duplicating that first cut.

Now, when I have a problem key, I simply use the appropriate depth key and make the first cut on a duplicating machine and generate the rest of the code cuts in the usual manner on my 200.

Lewis C. Elkin,  
Texas

#### Sieveking E-Z Pull GM Wheel Puller Winner

##### **A Ceiling Organizer**

I have found a solution to the problem of where to store opening tools so they would be accessible when you need them and not tangled and stuck together like a mound of cold spaghetti. The first thing I learned was never to put those tools inside of anything! I tried the PVC pipe and various types of cases without any luck. After trying nearly everything including a shadow board (but where do you put that?) I think I hit upon the simplest solution.

My van has a hardboard ceiling. I decided that I would try mounting the tools there. The problem was what to use to hold them securely in place and yet allow me to quickly grab the right tool when I needed it.

What I did was to punch holes in the ceiling and use the little white plastic wall board anchors (the blue "lag" type or Molly type won't work). The small ones cost about .31¢ each and take a #6 screw which I used to attach a small Bull Dog clip.

The trick is to use the natural curve of the van's ceiling to keep the tool firmly in place. I installed the clip to hold the tool at its center point. Since the length of the tool requires me to "push" the tool into the clip with the ends of the tool resting against the ceiling, the resulting "bow" of the tool keeps it firmly in place.

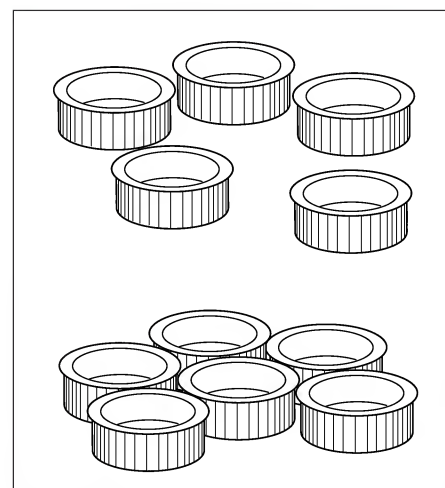
True, it required a certain amount of experimenting and "jiggling" to get everything in place just where I wanted it, but now each tool is installed above my head, out of the way and easily accessible when I need it.

Chuck Michael,  
Texas

#### Prolock PK-15 Pick set Winner **Save Those Bottle Caps**

Here's an easy-to-make device that I find helpful whenever working on a lock where I need to keep the springs and pins in order. This simple device stores and keeps the top pins and springs from any cylinder separate and accessible.

Use contact cement (or epoxy) to fasten five or six soda bottle caps together in an arrangement like you see in *illustration 2*. After gluing or epoxying the caps, you can hold them in position by using a rubber band wrapped around the outside of the group of caps.



**Illustration 2**

By gluing or epoxying a piece of fine grit sandpaper or rubber to the tops, you can prevent the device from sliding around on the work bench. By numbering the tops from one to six, you'll know at a glance where each set of pins go.

Eddie Bolden,  
Illinois

#### Sieveking Auto Keyblank Reference Winner

##### **Bypass The Roll-Tops**

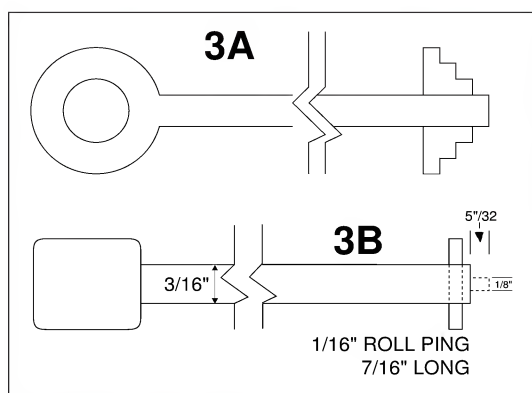
After spending too much time and wasting too many key blanks trying to open a very old roll top desk, I promised myself that I would find a better way to accomplish this onerous job in the future.

Since discovering my better way, I have opened several of these desks in the last few years almost as quickly as if I had an actual key.

The majority of these roll top desks have spring latch locks that lock when closed. The key for the majority of these locks use key blanks similar to ILCO's #654 (see *illustration 3a*).

The tool I discovered was made from an old screwdriver and works very well on a variety of this type of lock. As you can see in *illustration 3b*, the screwdriver I used had a 3/16" shaft. I cut about 1" off the end (getting rid of the tip) and drilled a 1/16" hole about 5/32" from the end of the shaft. I inserted a 1/16" roll pin about 7/16" long in such a manner that the protruding ends were even. Then, I filed the end of the shaft to about a 1/8" diameter.

To use the tool, I insert it full into the lock while holding an opening pressure on the tool tip. I work the pick tool clockwise and then counter-clockwise (a back and forth motion) and, at the same time, work



**Illustration 3A & 3B**

the tool in and out just slightly. I can easily feel the lock open, releasing the roll top.

Jim Ripley, CML  
Oklahoma

**Tech Train Video Winner  
Now, That's A Wedge**

A very effective and reasonably priced wedge for viewing the inside of car doors can be obtained from your local chain-saw dealer. Ask for the longest plastic felling wedge that they can order for you. Felling wedges are used to prevent the pinching of the saw or for directing the start of the tree fall.

Felling wedges are made of high impact plastic. They are very strong and not abrasive. My choice is made by STHIL.

The model that STHIL makes is almost nine inches long and nearly four inches wide. When cut laterally, one of these wedges yields three bright orange wedges that are darned hard to miss when you leave one in the window of a car.

You can drill holes in the side for a hanging loop so you can hang them on your tool board. I even drill a few holes in the top to accommodate my Benda-Lite.

As an added bonus, they are wonderful tools for prying and wedging the top of car doors. Their long taper makes them handy for many other applications.

Duane A. Miller  
California

**Jake's Grab Bag Winners:  
Gas Line Fish Line**

My least favorite method of opening a locked car (but sometimes necessary as a last resort) is to wedge the door and push or pull something to unlock the door.

For those times when there is no better way to do it, I have bought a five foot length of automotive gas line.

I cut off the flared tips and remove the threaded connectors. This gas line can now be used as a bendable tool that can be used to trip whatever presents itself to unlock the door.

I've used it on electric locks, door handles, rocker buttons, vertical slides and when the engine is running, to lower electric windows. Once when the keys were locked in the trunk, I've pulled the trunk release and twice, when all else failed, I hooked the keys and fished them out.

Depending on the make and model of the car, I either bend a small hook on the end or make a point. I carry several wooden wedges of various lengths and tapers and use whatever is appropriate.

Berkley Ruiz, CPL  
Georgia

**All Jammed Up**

After too many call backs to service thumb turn mortise cylinders that had jammed, I found a quick trick to prevent further problems. Most of the thumb turn mortise cylinders that I have installed, there is a spring loaded ball in the plug to hold the cam in the

upright position. When the chamber over the ball gets full of dirt and debris, the plug jams up.

To prevent this from happening, I tap the proper chamber (the holes already there) with an 8-32 tap and seal the hole (after lubricating the ball and spring) with an Adams Rite set screw. This prevents the problem from occurring.

Dave Vessels  
Connecticut

**White It Out**

I have used many methods for locating strike holes, but the best that I have found is White Out (Liquid Paper). The water based type seems to work the best as it does not dry too fast.

Just paint some on the end of the bolt, close the door and throw the bolt against the jamb. Hold it for a few seconds and retract the bolt. It leaves a nice clear mark where you need to drill the strike hole.

This works really well on dark woods and primed metal jambs, and it takes up very little room in my already over-loaded tool box.

Richard Cybrynski  
N. Carolina

TNL



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# "Knight"—Mare Safe Opening

## Part 1

We all know that safes come in all different shapes and sizes. They also come in various grades of burglary and forced entry resistance, requiring different opening techniques be utilized for each unit. If you're called to open a TL-15 Knight safe, this is one container you do not want to drill through the door if you don't have too.



by  
**Dale Libby**

**T**he art of safecracking is ever changing and we, as professional safe technicians, must not be afraid of reorganization and transformation. The really good safe technician will always innovate. Sometimes the new thoughts come after a particularly difficult safe opening.

Within a weeks time, I was called on to open two Knight money chests in two different Clark gas stations. It seems that when a new manager takes over, the first thing he does is to lock the bottom unit of the double safe door (Over and under) configuration. Then, later he asks the former manager the combination for the lower unit so he can total up the day's receipts. He then finds out that no one ever locked the lower unit because no one ever knew the existing combination.

Knight Safe Company, makes a great money chest in many different styles. They use a good grade of steel in the construction of the chests, and a really diabolical chip or matrix type of hardplate. This is really good hard plate and is the cause of death to many hardplate drill bits and many hours spent on the TL-15 rated units.

The particular safe used in Clark gas stations is an interesting unit. It is installed in the floor before any of the inside cabinetry is installed over and around the Knight unit. The chests in question actually extend below the floor level

about 12 inches. This is the depository part of the safe. The upper unit has a hopper type element that deposits the drops in the lower unit.

Both upper and lower safe doors use the GPC safe door, lock, and relocker configuration. GPC stands for Gary Primary Configuration and is MY nomenclature. This style of lock mounting was pioneered by the Gary Safe Company and is in general use on many types of money chests.

The basic configuration is a lock mounted VD (Vertical Down) with a relocker mounted next to the lock. The combination lock bolt blocks the movement of the center bolt bar. (See illustration 1) If the relocker is set off, it also blocks the movement of the bar.

The outside handle can be located anywhere and it activates the center bolt bar. It is attached to the bar with a cam and screw arrangement. Safes like Gardall, Gary, Knight and even Mosler use this basic configuration. Sometimes, with Mosler, the combination lock is mounted VU (Vertical UP), but the theory of opening and the relocker placement is basically the same.

For some strange reason, I decided to drill in from the front of the safe. There were fancy cabinets, computer equipment, and lottery machines located adjacent to the sides of the safe. Instead of moving this equipment, I opted for drilling from the front. I will not make this mistake again. This article will deal with front penetration of this safe. The next Knight article will deal with the somewhat easier



# Continued from page 114

drilling technique of side drilling and reading of the combination with a borescope.

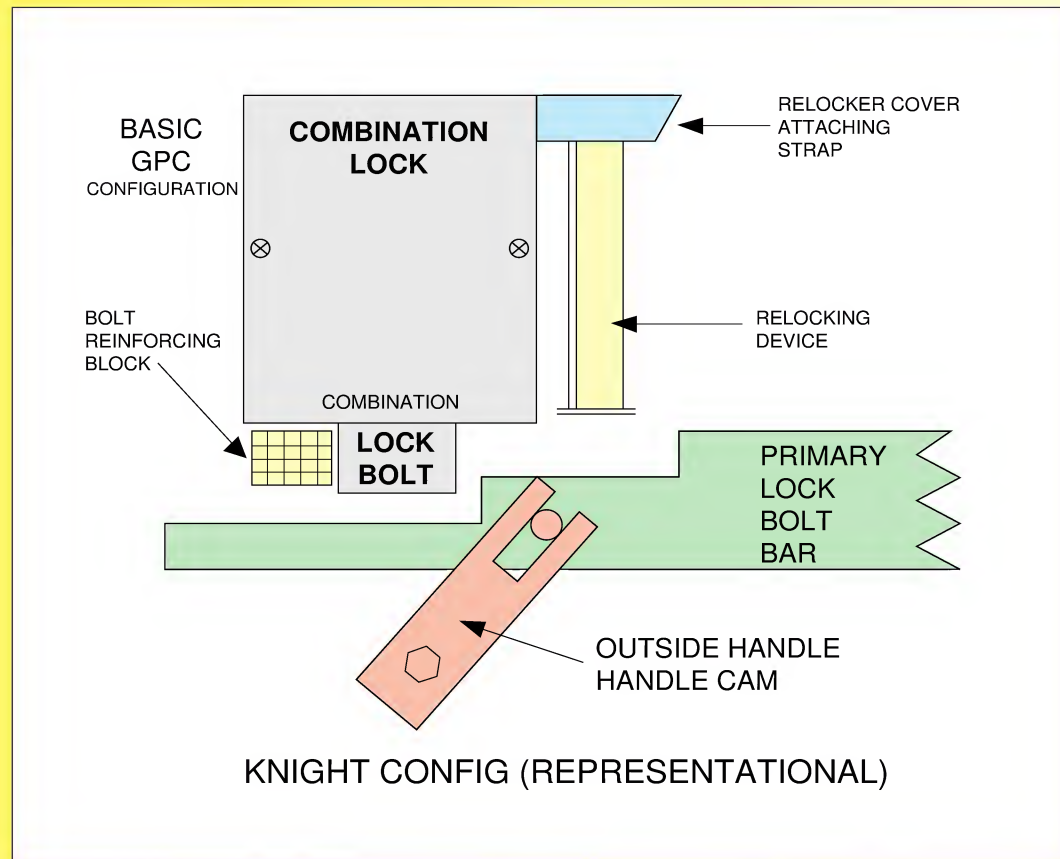
Photograph 2, shows the dial of the Knight Safe Company. Since the lock is mounted vertical down, we know where to drill for the end of the fence. This is at number 73 on the dial about 7/8 inch out. The reason for drilling at the drop in-point of the lever and the gates it many fold. If, for some reason, one of the wheels is unlocked, the safe can be opened through this hole by either probing the wheels or by drilling off the end of the fence.

If you drilled a hole to scope the wheels not at the drop in point, then you are in a lot of trouble if the lock is malfunctioning. You only want to drill ONE hole in the front of this unit. Make it a multi-functional hole. You will have to replace the lock anyway, so drill at the precise drop in-point.

Sometimes, with a MOSLER unit, I will drill for the scope hole. Because of the front reading driver, there is NO way to easily dial the safe lock open. The fence must be drilled off to accomplish an easy opening at this location.

The steel used in the door of the Knight Safe is great, The hardplate is extremely difficult to drill as well. I called Bob Volosing of Strong Arm Drill (California) and talked to him about the large DBA (Drill Bit Attrition) used on this safe. He suggested that the next time I try to drill through this type of hardplate, I use a step method of drilling with hard plate bits. This means that one uses a 1/4 inch carbide drill bit, then changes to a 5/16 inch drill bit, and back again to a 1/4 inch bit. I have not tried this, but will report on this when I do. Bob stated that Knight Safes have been very good for his business.

Once the end of the lever is finally exposed, dial open the safe, repair the hole with hardened drill rod and ball bearings, and install a new lock. Average time for opening and repair is in excess of three hours. Next time I will discuss the advantages and necessity



1. The basic configuration of a Knight safe door.

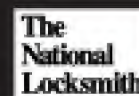


2. The easily distinguishable Knight key locking dial.

of side drilling and reading of the combination through the change key hole, with a few tips that will speed up and make the opening easy.

Open and prosper!!!





# KEY CODES

## Yale Code Series

### Part 1: 1-1600

#### Depths:

1 - .250  
2 - .232  
3 - .214  
4 - .196

#### Spacing:

1 - .146  
2 - .286  
3 - .426  
4 - .566

#### HPC 1200:

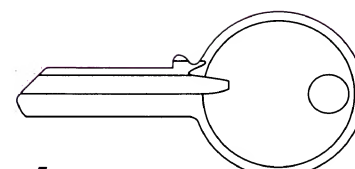
Code Card - C56

#### Framon

Block #1  
Spacing: .140  
Starting Cut: .146  
No. of Cuts: 4

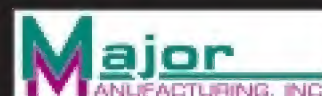
#### Key Blanks:

Ilco - 997X  
Silca - YA82  
Yale - X10-1/2



**PROFILE**

1	3145	60	4775	119	3755	178	4637	237	3773	296	6551
2	1346	61	5156	120	4251	179	5224	238	4267	297	7324
3	1532	62	5411	121	4455	180	5432	239	4473	298	4433
4	2436	63	5745	122	4631	181	6346	240	5236	299	1421
5	3152	64	6331	123	5213	182	6532	241	5443	300	1575
6	3377	65	6511	124	5422	183	7464	242	6356	301	2313
7	3564	66	6667	125	7762	184	7642	243	6543	302	2656
8	3741	67	5623	126	5753	185	1153	244	7474	303	3251
9	4234	68	7777	127	6337	186	1557	245	7652	304	3455
10	4441	69	1136	128	6522	187	2257	246	1214	305	3631
11	4767	70	1356	129	6675	188	2463	247	1567	306	4315
12	5375	71	1543	130	7456	189	2637	248	2267	307	5247
13	5573	72	2243	131	7633	190	3232	249	2473	308	5453
14	5736	73	2447	132	1145	191	3436	250	3243	309	5625
15	6321	74	2621	133	1364	192	3765	251	3447	310	6366
16	7442	75	7764	134	1551	193	4465	252	3621	311	6553
17	1125	76	3415	135	2251	194	4642	253	3775	312	7321
18	1534	77	3574	136	2455	195	5226	254	4475	313	7662
19	2234	78	3751	137	2631	196	5434	255	4652	314	1233
20	2441	79	4245	138	3222	197	5763	256	5241	315	1423
21	3154	80	4447	139	3426	198	5534	257	5445	316	1577
22	3566	81	4621	140	3757	199	7466	258	5773	317	2315
23	3743	82	4777	141	4253	200	7644	259	6545	318	3253
24	4236	83	5413	142	4457	201	1155	260	7476	319	3457
25	4443	84	5551	143	4633	202	1374	261	7654	320	3633
26	5152	85	5747	144	5215	203	2465	262	1412	321	4322
27	5377	86	6333	145	5424	204	2642	263	2475	322	4662
28	5575	87	6513	146	5557	205	3234	264	2652	323	5251
29	5741	88	7452	147	5755	206	3441	265	3245	324	5455
30	6323	89	7625	148	6342	207	3767	266	3451	325	5631
31	6663	90	3557	149	6524	208	4263	267	3623	326	6555
32	7444	91	1545	150	6677	209	4467	268	3777	327	6731
33	7773	92	2245	151	7635	210	4644	269	4311	328	7323
34	1352	93	2451	152	1147	211	5232	270	4477	329	7664
35	1536	94	2623	153	1366	212	5436	271	4654	330	1235
36	2236	95	3213	154	1553	213	5765	272	5243	331	1425
37	2443	96	3422	155	2253	214	6352	273	5447	332	2662
38	3156	97	3576	156	2457	215	6536	274	5521	333	3255
39	3411	98	3422	157	2633	216	7646	275	5775	334	3635
40	3745	99	4247	158	3224	217	1157	276	6362	335	4324
41	4241	100	4453	159	3432	218	1376	277	6547	336	4664
42	4445	101	4625	160	4255	219	1563	278	7312	337	5253
43	4773	102	5211	161	4635	220	2263	279	7656	338	5457
44	5154	103	5415	162	5222	221	2467	280	1225	339	5633
45	5577	104	5553	163	5426	222	2644	281	1414	340	6557
46	5743	105	5751	164	5757	223	3236	282	1573	341	6733
47	6325	106	6335	165	6344	224	3443	283	4225	342	7325
48	6665	107	6515	166	6526	225	4265	284	2477	343	7666
49	7446	108	6673	167	7462	226	4646	285	2654	344	1431
50	7621	109	7454	168	7637	227	5234	286	3247	345	2324
51	7775	110	7631	169	1151	228	5441	287	3453	346	2664
52	1134	111	1143	170	1555	229	5767	288	3625	347	3257
53	1465	112	1362	171	2255	230	6354	289	4313	348	3463
54	1541	113	1547	172	2635	231	6541	290	4656	349	3637
55	2241	114	2247	173	3226	232	1565	291	5245	350	4326
56	3445	115	2453	174	3434	233	2265	292	5451	351	4666
57	3413	116	2625	175	3763	234	2646	293	5623	352	5255
58	3747	117	3215	176	4257	235	3241	294	5777	353	5635
59	4243	118	3424	177	4463	236	3445	295	6364	354	6374



# Yale Code Series

## Part 1: 1-1600

355	6735	430	6414	505	4542	580	4142	655	6632	730	4753
356	7331	431	6573	506	5322	581	4367	656	7565	731	5133
357	7511	432	7344	507	5662	582	4554	657	7743	732	5546
358	1433	433	7526	508	6225	583	5336	658	2152	733	6264
359	2326	434	1241	509	6433	584	5521	659	2377	734	6645
360	2666	435	1446	510	6762	585	5674	660	2564	735	7423
361	3465	436	2343	511	7356	586	6242	661	6654	736	7577
362	3642	437	2525	512	7543	587	6446	662	3353	737	7755
363	4332	438	5143	513	1253	588	6774	663	3537	738	1341
364	4512	439	3477	514	2125	589	7555	664	4154	739	1333
365	5257	440	3654	515	2355	590	7732	665	4566	740	1513
366	5463	441	4345	516	2542	591	1265	666	4743	741	7434
367	5637	442	4531	517	3326	592	2142	667	5121	742	2422
368	6376	443	5475	518	3666	593	2367	668	5351	743	2576
369	6563	444	5652	519	4131	594	2554	669	5535	744	3137
370	6737	445	6212	520	4357	595	3343	670	6254	745	3365
371	7333	446	7534	521	4544	596	3525	671	6634	746	3552
372	7513	447	6575	522	5324	597	4144	672	7567	747	4215
373	1435	448	6752	523	5664	598	4556	673	7745	748	4424
374	4762	449	7346	524	6231	599	4732	674	1315	749	4755
375	2512	450	7532	525	6435	600	5341	675	2154	750	5135
376	3263	451	1243	526	6764	601	5523	676	2566	751	5363
377	3467	452	2345	527	7545	602	5676	677	3125	752	6266
378	3644	453	2531	528	1255	603	6244	678	3355	753	6647
379	4334	454	3313	529	1462	604	6622	679	3542	754	7425
380	4514	455	3656	530	2131	605	6776	680	4156	755	7757
381	5465	456	4113	531	2357	606	6775	681	4411	756	1335
382	5642	457	4347	532	2544	607	7734	682	4745	757	1515
383	6565	458	4533	533	3332	608	1267	683	5123	758	2215
384	6742	459	5311	534	3512	609	1474	684	5353	759	2424
385	7345	460	5477	535	4133	610	2144	685	5537	760	3142
386	7515	461	5654	536	4546	611	2556	686	6256	761	3367
387	7674	462	6214	537	5326	612	5731	687	6462	762	3554
388	1437	463	6423	538	5666	613	3345	688	6636	763	4222
389	2334	464	6577	539	6233	614	3531	689	7412	764	4426
390	2514	465	6754	540	6437	615	4146	690	7747	765	4757
391	3265	466	7534	541	6766	616	4734	691	2156	766	5137
392	3646	467	1245	542	7362	617	5343	692	2411	767	5365
393	4336	468	1452	543	7547	618	5525	693	3357	768	5563
394	4521	469	2114	544	1257	619	6246	694	3544	769	5474
395	4674	470	2347	545	1464	620	6452	695	4413	770	6651
396	5263	471	2533	546	5566	621	6624	696	4747	771	7431
397	5467	472	3315	547	2546	622	7374	697	5125	772	1337
398	5644	473	4115	548	3334	623	7736	698	5355	773	1522
399	6567	474	4351	549	3514	624	1476	699	5542	774	2426
400	6744	475	4535	550	4135	625	2146	700	6464	775	3144
401	7337	476	5313	551	4363	626	2373	701	6641	776	3556
402	7522	477	5656	552	5332	627	3114	702	7424	777	3732
403	7676	478	6221	553	5512	628	3347	703	7573	778	4224
404	1442	479	6425	554	6235	629	3533	704	7751	779	4432
405	2336	480	6756	555	6442	630	4375	705	1324	780	5142
406	2521	481	7352	556	7364	631	4562	706	2413	781	5367
407	2674	482	7536	557	7551	632	4736	707	3133	782	5565
408	3267	483	1247	558	1466	633	5112	708	3546	783	6476
409	3473	484	1454	559	2135	634	5345	709	4211	784	6653
410	4341	485	2351	560	2363	635	5531	710	4415	785	7433
411	4523	486	2535	561	3336	636	6454	711	4574	786	7763
412	4676	487	3322	562	3521	637	6626	712	4751	787	1342
413	5265	488	3662	563	3674	638	7376	713	5131	788	1524
414	5646	489	4122	564	4137	639	7563	714	5357	789	2224
415	6412	490	4353	565	4365	640	7741	715	5544	790	2432
416	6746	491	4537	566	4552	641	2375	716	6262	791	3146
417	7342	492	5315	567	5334	642	2562	717	6466	792	3373
418	7524	493	6223	568	5514	643	6311	718	6643	793	3734
419	1236	494	6431	569	6237	644	3351	719	7421	794	4226
420	1444	495	7354	570	6444	645	3535	720	7575	795	4434
421	2341	496	7541	571	7366	646	4152	721	7753	796	4763
422	2523	497	1251	572	7553	647	4377	722	1326	797	5144
423	2676	498	1456	573	1263	648	4564	723	2415	798	5567
424	3475	499	2353	574	2137	649	4741	724	2574	799	5732
425	3652	500	2537	575	2365	650	5114	725	3135	800	6312
426	4343	501	3324	576	2552	651	5347	726	3363		
427	4525	502	3664	577	3341	652	5533	727	4213		
428	5267	503	4124	578	3523	653	6252	728	4422		
429	5473	504	4355	579	3676	654	5356	729	4576		

TNL



# TEST DRIVE



**Taking Industry Products for a Spin Around the Block**

## THE BORKEY 954 REXA

**PRODUCT:** The Borkey Rexa machine is a semi-automatic key duplicating machine that has been around for a very long time. It is manufactured by Borkey in Germany since 1954, and is sold in the United States exclusively by DiMark International in California.

**FEATURES:** The spring-loaded carriage is smoothly released with the right forefinger pulling the trigger which is located just under the carriage knob. The handle which drives the carriage from left to right has a concealed roller bearing which assures smooth operation. There is no carriage chatter during the key cutting cycle.

The heavy steel casting is very important to the smooth operation of the Rexa. The machine is solid and weighs in at about 70 pounds. This is one of the heaviest machines tested with a very stable feel.

Cutting depth adjustments can be accurately made with the adjustable feeler depth gauge allowing for very precise key duplication.

The lighted push button switch is located on the left side of the switch housing away from key filings and the standard 110v motor can be powered without modification by a Redi-Line 500 watt model DA-12A.

**SPECIAL FEATURES:** The heart and soul of a Borkey machine is its cutter and jaws. The 80mm cutter is slightly thinner than other 80mm duplicating cutters. This allows a straighter and deeper cut in the first position of keys like GM and Chicago without wiping out the shoulder.

The standard jaws are uniquely designed which are hinged at the bottom with a very simple convex/concave washer set under the wing nut. The jaw design allows for easy operation which securely holds a key of just about any size or shape. The jaws themselves are positioned almost

five inches apart and will hold the longest foreign car keys even if the heads are very large.

The jaws have four slots allowing you to slide in the flat or cutout tip stops which come with the machine. The cutout stops are used for cross-cut keys and Best style keys. The flat tip stops have a variety of uses including cutting keys without shoulders and tip stopping keys that have broken in the middle. Though they are seldom needed, a set of wires are provided to lift the cuts of very shallow keys above the face of the jaw.

### COMMENTS AND SUGGESTIONS:

The separate key gauge accessories are the only feature of the Rexa I did not like. This is a very high dollar key duplication machine that should find another way to gauge shoulderless keys without needing separate flat bars for key stops that can easily be lost.

The list price of the Borkey 954 Rexa is \$2150.00.

This is higher than many other semi-automatic key machines, but it is an excellent key duplication machine. The operation is smooth, fast and accurate. Based on a solidly built frame, it will provide many years of dependable service.

For more information on the Borkey 954 Rexa, contact: DiMark International, 3117 Liberator Street, Unit A, Santa Maria, Ca 93455.

(805) 922-1182. **TNL**



**DESCRIPTION:**  
Borkey 954 Rexa Semi Automatic Key Duplication Machine.

**COMMENTS:**  
Based on a solidly built frame, the machine is smooth, fast, and accurate.

**TEST DRIVE RESULTS:**  
The Rexa features German engineering that will provide many years of accurate dependable service.

